THE

# JOURNAL OF GAS LIGHTING,

## WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XX. No. 500—23RD YEAR.] LONDON, DECEMBER 5, 1871. [Subscription per Annum. { 15s. in Advance. 18s. Credit. ] DOUBLE No. Price 1s.

**RAMSAY'S NEWCASTLE CANNEL COAL.** Analysis—10,000 cubic feet of gas per ton of coal; 26-candle gas; 13¼ cwt. coke per ton of coal.

RAMSAY'S PATENT CONDENSED COKE.

DO. GARESFIELD COKE.

**RAMSAY'S FIRE-CLAY ARTICLES.**

GAS-RETORTS, introduced 1823. FIRE-BRICK WORKS, established 1864. FIRE-CLAY SANITARY PIPES. CHIMNEY-TOPS, and all Goods made of Fire-Clay. The Fire-Clay is worked from Blaydon Main Colliery, is of excellent quality, and no expense spared in perfecting every article. The FIRE-BRICKS (marked "RAMSAY") are to be seen in all parts of the world, and the Works are the most extensive in the Kingdom.

Manufactories—Derwenthaugh, Swalwell, and Hebburn Quay, near Newcastle-on-Tyne; and London Wharves—Falcon Wharf, No. 80, Bankside; and Honduras Wharf, Cubit Town. Large stocks kept.

Address G. H. RAMSAY, NEWCASTLE-ON-TYNE.

**GEORGE GLOVER & CO.,**

Patentees of the Standard Gasometers for the Government, and of the

IMPROVED DRY GAS-METERS.

These Meters are warranted to measure correctly and not to vary. Their acknowledged superiority has brought them into general use more rapidly than any Meters hitherto manufactured.

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236, GEORGE STREET, GLASGOW;

OR

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COWEN'S PATENT FIRE-CLAY RETORTS.

**JOSEPH COWEN and CO.,**

BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,

Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS-RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS-RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."

J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.

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Coal Office,
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**JOHN RUSSELL AND CO.,**

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AND

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*Established at the commencement of Gas Lighting.*

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Patentees of the Standard Gasometers for the Government,

TWO MEDALS,

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HAVE OBTAINED THE

HIGHEST

PRIZE

FOR

SILVER MEDAL,

PARIS, 1867.

# IMPROVED DRY GAS-METERS AND GASOMETERS,

AT THE

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STEAM-COCKS, AND ALL KINDS OF GAS-JOINTS.
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Also ORDINARY WELDED WROUGHT-IRON TUBES and FITTINGS,
FOR GAS, STEAM, & WATER, EITHER BLACK, GALVANIZED, OR ENAMELLED.
CORE BARS FOR IRONFOUNDERS, STOCKS, TAPS, AND DIES, IRON COCKS, &c.
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SILVER MEDAL, PARIS EXHIBITION, 1867.
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SOLE LICENSEES AND MANUFACTURERS for the United Kingdom of
THE LAVENANT PATENT ENAMELLED TUBES AND FITTINGS.
LAP-WELDED IRON & HOMOGENEOUS METAL TUBES
For Locomotive, Marine, and Stationary Boilers.
Boiler-Tube Ferrules, Gun-Metal Gland Cocks, Water-Gauges, Whistles, &c.; Stocks, Taps, and Dies for Screwing, and Gas-Fitters Tools of all kinds.
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**WILLIAM INGHAM AND SONS,**
WORTLEY FIRE-BRICK AND RETORT WORKS,
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W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of
RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,
beg to call especial attention to their RETORTS, which have for many seasons proved to be unsurpassed in quality by any in the Kingdom, their FREEDOM FROM CRACKS and the ADHESION OF CARBON rendering them worthy the attention of all parties interested in the making of Gas.
The Works are of such magnitude as to ensure the prompt execution of orders to any extent.
Estimates for Setting, or Bricklayers sent when required.
GAS OVENS IN SEGMENTS OF EQUAL QUALITY.
A large Stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all Sizes kept in London at Mr. ALFRED WILLIAMS, Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.
N.B.—*Export orders continue to have prompt attention.*

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The only Prize Medal awarded for TUBES & FITTINGS.
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GAS-FITTERS TOOLS, VALVES, COCKS, &c.

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CAST & WROUGHT IRON TANKS FOR DITTO;

**PURIFIERS, CONDENSERS, SCRUBBERS, RETORTS, VALVES;**

**IMPROVED WROUGHT-IRON RETORT-LIDS, CROSS-BARS, & SCREWS;**

AND GAS APPARATUS OF EVERY DESCRIPTION.

**SOLE MANUFACTURERS OF LIVESEY'S PATENT GASHOLDER MAN-LID,**

By use of which Man-lid, inlet and outlet pipes can be examined and cleansed without loss of gas in crown of holder, or ingress of atmospheric air.

**ROOFS, GIRDERS, BRIDGES, AND BOILERS OF ALL KINDS.**

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**GASHOLDERS, TELESCOPE AND SINGLE-LIFT,**

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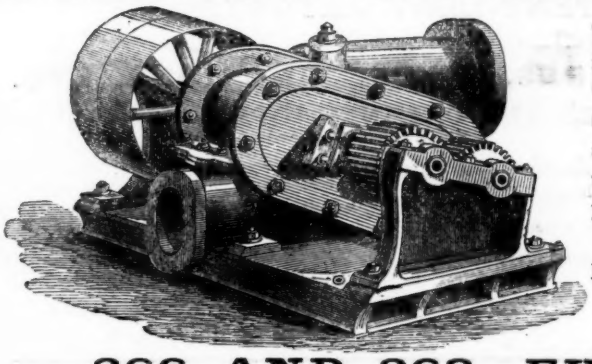
# LEETE AND EDWARDS,

SOLE MAKERS OF

# FORBES'S PATENT ROTARY PUMP,



The very best Pump yet introduced for pumping in gas-works, tanneries, distilleries, breweries, water and sewage works, paper-mills sugar-houses, starch and chemical works, for draining quarries and irrigating land, filling tanks at railway stations, factories, towns, mansions, ships, and dock-yards.

In use at several of the largest gas-works in London.

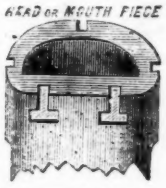
| Diameter of Pipes, Suction and Delivery. | Gallons raised per Hour. |
|---|---|
| Inches. | |
| 2 | 2,000 |
| 2½ | 3,000 |
| 3 | 4,500 |
| 4 | 7,500 |
| 5 | 12,500 |
| 6 | 18,000 |
| 7 | 24,000 |
| 8 | 31,000 |
| 9 | 40,000 |
| 10 | 49,000 |
| 11 | 59,000 |
| 12 | 71,000 |
| 14 | 96,000 |
| 15 | 110,000 |
| 16 | 125,000 |
| 18 | 160,000 |

*For testimonials and particulars, apply at*

**366 AND 368, EUSTON ROAD, N.W.**

# KING BROTHERS,

STOURBRIDGE FIRE-BRICK AND RETORT WORKS.



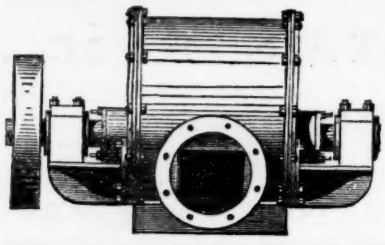
KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

**Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Burs, Flues, and Quarries, are all Manufactured of the same quality of Clay.**

**Every Retort and Brick is branded "King Brothers, Stourbridge."**

**Agent in Ireland—Mr. JAMES FURNESS, DOCTOR GARDENER STREET, DUBLIN.**

# BEALE'S GAS-EXHAUSTER IMPROVED.



FROM 250 TO 250,000 CUBIC FEET PER HOUR.

Since Mr. BEALE'S retirement, the Oldest Makers are

**J. BURTON, SONS, AND WALLER,**

MAKERS OF ENGINES, MACHINERY, and IRONWORK for GAS-WORKS.
Efficient and durable TAR, LIQUOR, and SYPHON PUMPS.
GAS-VALVES in stock, 2 inches to 30 inches.
SELF-ACTING BYE-PASS VALVES, with Lid and Relieving Lever,
ROTATORY, TUMBLER, and CAPILLARY WATER DISTRIBUTORS for SCRUBBERS.
EXHAUSTERS from 3000 to 30,000 per hour in stock.]

HOLLAND STREET, BLACKFRIARS, LONDON, S.E.,
Between Blackfriars' and Southwark Bridges.

# E. J. & J. PEARSON,

DELPH & TINTAM ABBEY FIRE-CLAY & BRICK WORKS,

**STOURBRIDGE,**

PROPRIETORS OF
BEST GLASS-HOUSE POT & CRUCIBLE CLAY;
MANUFACTURERS OF
GLASS-HOUSE POTS, CRUCIBLES, GAS-RETORTS, & FIRE-BRICKS OF EVERY DESCRIPTION.

ECONOMY IN GAS PURIFICATION. A PURER GAS AT LESS COST, AND GREAT SAVING IN LABOUR.

# M'DOUGALLS' PRECIPITATED PEROXIDE OF IRON.

The above Oxide is now in use at some of the largest works in the kingdom, and has gained a decided preference, owing to its efficiency, cheapness, and the great saving in labour effected by its use.

It is a pure artificial Hydrated Peroxide, with an addition of only sufficient sawdust to give it the needful lightness or porosity to prevent pressure, and every particle is available for use.

In selecting an oxide, a point more important than its price, is to learn the cost of labour entailed in its use. Whilst at large works the cost of labour for purifying, where lime alone or the natural oxides are employed, is 2d. to 3d. per ton of coals, by the use of the above Oxide it is reduced to 1d. to 1½d., owing to the purifier's working so much longer when charged, and to rapid revivification—two points of special importance in the busy season.

For export to Foreign Works it is unequalled, every particle being available, and saves freight over less concentrated materials.

NOTE.—It is important to note that only the Hydrated Peroxide of Iron is useful, simple oxide being worthless. Inferior oxides show a large per centage of simple oxide, but very little Hydrated Peroxide.

**M'DOUGALL BROTHERS,**

LONDON—158, LEADENHALL STREET, E.C. MANCHESTER—68, PORT STREET.

## LIVESEY FIRE-CLAY WORKS,

NEAR BLACKBURN, LANCASHIRE.

(ESTABLISHED 1835.)

# ORLANDO BROTHERS,

MANUFACTURER OF PATENT CLAY RETORTS,

AND EVERY DESCRIPTION OF

**TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS, ETC.**

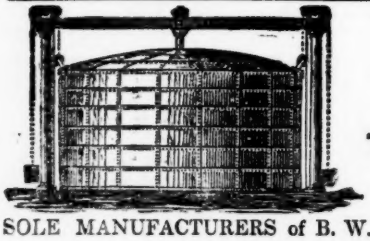
**FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.**

As Trustees of the late ORLANDO BROTHERS, we most respectfully announce that we intend to continue the above business, under the name of ORLANDO BROTHERS, in which name all communications must be addressed.

We trnst that we shall receive a continuance of the same support which was given to our late father.

We are, yours most respectfully,

ORLANDO BROTHERS.
FRANCIS W. BROTHERS.
COLIN BROTHERS.



# IMPROVED GAS APPARATUS,

FOR CITIES, TOWNS, VILLAGES, &c.,

INVENTED AND MANUFACTURED BY

# W. C. HOLMES & CO.,

WHITESTONE IRON-WORKS, HUDDERSFIELD.

SOLE MANUFACTURERS of B. W. THURSTON'S IMPROVED SCRUBBER, CONDENSER, and WASHER, in use in many of the principal Gas-Works on the Continent.

PATENTEES of the IMPROVED COMBINED PURIFYING APPARATUS, so eminently adapted for Exportation.

ESTIMATES, PLANS, and SPECIFICATIONS PREPARED for BUILDINGS and APPARATUS.

*Prospectus, Price Lists, &c., on application.*

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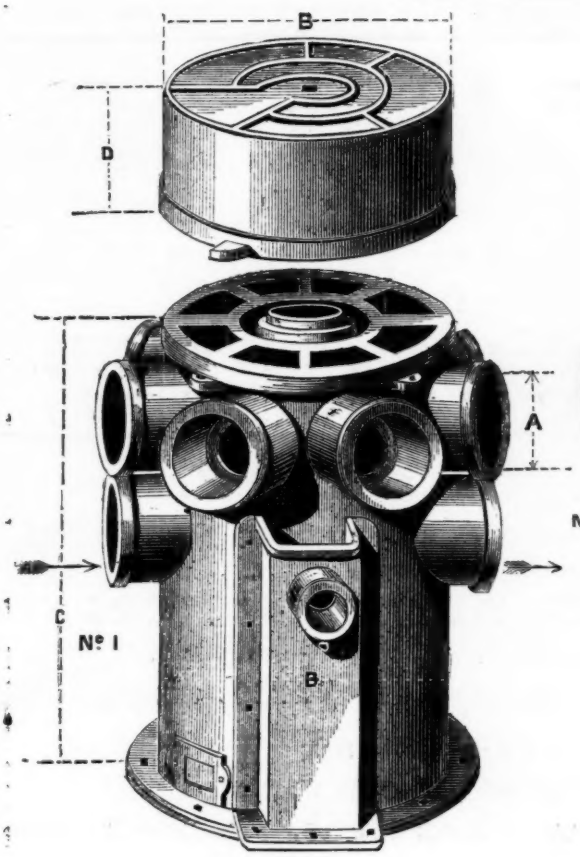
REFERENCES TO NEARLY 300 GAS-WORKS.

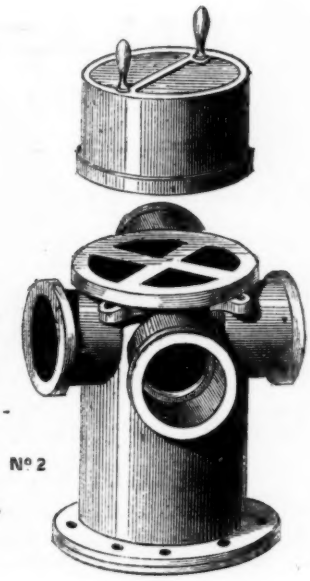
# THE THORNCLIFFE IMPROVED CENTRE-VALVE,

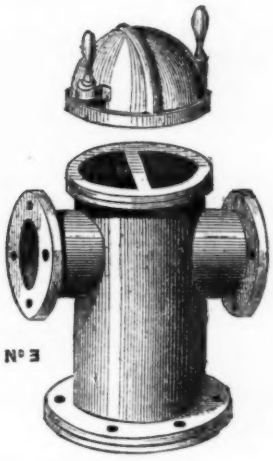
MANUFACTURED BY

# MESSRS. NEWTON, CHAMBERS, & CO.,

THORNCLIFFE IRON-WORKS, NEAR SHEFFIELD.




Sizes of the

THORNCLIFFE IMPROVED CENTRE-VALVE.

| | | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. |
|---|---|---|---|---|---|---|---|---|---|
| A | Bore of Pipe... | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| B | Diam. of Body. | 16 | 20 | 23 | 26 | 28 | 31 | 34 | 40 |
| C | Height of Tank. | 33 | 35 | 38 | 43 | 46 | 48 | 51 | 56 |
| D | Depth of Cover. | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 |
| | Total height... | 41 | 44 | 48 | 54 | 58 | 61 | 65 | 72 |

THORNCLIFFE IMPROVED BYE-PASS VALVE.

SIZES

From 3 ins. upwards.

THORNCLIFFE IMPROVED STOP-VALVE.

SIZES

From 3 ins. upwards.

**In all cases the Covers are cast heavy enough to resist any required pressure.**

The advantages derived from the adoption of these Valves are so manifest and cardinal that in the immediate character of the change—the simplicity of the machine—the facility affording for cleaning out connexions between Valve and Purifier—the perfect collection and delivery by suitable overflow of the ammonia, at a greatly diminished depth from ground-line over the old form of Valve—the advantage of connecting on the same level, and at any angle, or opposite to each other, the inlet and outlet pipes without dip or rise—the clear acquisition of space in the purifying-house, by being able to place the boxes nearer together, the new Valve being entirely under the floor—and lastly, though of the greatest importance, the passage of crude and unpurified gas during the change is minimized to the merest fraction, thus preventing the fouling by impure gas the delicate machinery and easily affected exposed movements of the station-meter, thereby preventing the introduction of the enemy (unpurified gas) into the gasholder. Also a dead abutment is offered to all back pressure, imparting thereby to the gauges, governors, and hydraulic seals, a steadiness of action never realized with the once famous, but now fast becoming obsolete, Hydraulic Centre-Valve.

These Valves may be made of any size to suit any position of boxes, to stand any amount of pressure, warranted and tested with gas before leaving the manufactory, prepared to work any number of boxes in rotation—say, two, three, four, five, six, or eight—and for all Valves above 12-inch ports a suitable rack-and-pinion movement is attached if preferred. These Valves (specially arranged) are applicable to inlet or outlet pipes of gasholder, to act as Bye-pass Valves to meters, governors, exhauster, condensers, scrubbers, washers, driers, and duplicate systems of hydraulic main; also to act as Stop-Valves on special mains about the works. Where it is important no impediment be offered to tar or ammoniacal liquor, the same having uninterrupted flow to the general tar-well on the works, and for which purpose the slowly changed, often disordered, and at all times obstructive Slide-Valve (challenging the best of them) is superseded by the exceedingly simple, instantaneously changed Dome-Top Valve, which also carries so marked an index, whether open or shut, at any distance from close observation, providing the Valve can be seen at all. See sketch in perspective, No. 3.

**London Office—34, LONDON WALL, MOORGATE STREET, E.C.**

# JOHN HALL & CO.,

STOURBRIDGE.

MANUFACTURERS of FIRE-BRICKS, LUMPS, & TILES,

AND EVERY DESCRIPTION OF FIRE-CLAY GOODS.

N.B.—A Stock of 15 and 16 in. CIRCULAR RETORTS always on hand. Other kinds made to order on short Notice.

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PARIS, 1867.

CLASSES 24 and 53.

# WILLIAM SUGG,

GAS ENGINEER.

LONDON, 1862.

CLASSES 13 and 31.

PUBLIC LAMP GOVERNORS, LEVER COCKS, AND POLE LIGHTERS,

LAMP METERS AND BOXES.

LOWE'S JET PHOTOMETERS CAN NOW BE RATED TO 14 CANDLES.

VINCENT WORKS, VINCENT STREET, WESTMINSTER, S.W.

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# FLETCHER AND MURPHY,

GARRATT STREET WORKS, OLDHAM ROAD, MANCHESTER;

Manufacturers of

## IMPROVED CONSUMERS WET GAS-METERS

IN CAST-IRON CASES,

THE UNVARYING WATER-LINE GAS-METER,

AND

IMPROVED DRY GAS-METERS;

STATION-METERS OF ALL SIZES, with PLANED JOINTS;

GOVERNORS, PRESSURE AND EXHAUST REGISTERS, TEST HOLDERS,

And all kinds of Experimental Gas Apparatus.

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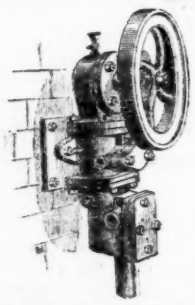


Attached to Wall-Plate.

# KITTOE & BROTHERHOOD'S

PATENT

# "PARAGON" STEAM-PUMP.

**Sizes Nos. 1 to 10 deliver from 75 to 21,000 gallons per hour; the height in feet being equal to twice the steam pressure in lbs. per square inch. Prices from £10 to £90.**

GAS COMPANY'S OFFICE, LUTON, BEDFORDSHIRE,
*Feb.* 23, 1870.

Gentlemen,—The Paragon Pump which I purchased of you in 1868 has been in constant use from the date of its purchase to this time, for the supplementary supply of two 8 h.p. steam-boilers. It is in request day and night, and has performed the duties required of it without needing any repairs.

Yours respectfully,

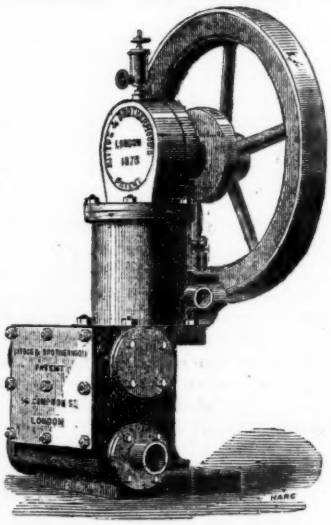
Messrs. Kittoe and Brotherhood. W. PHILLIPS.

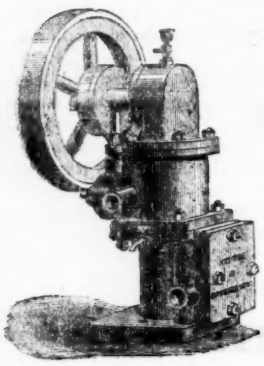
MANAGER'S OFFICE, REDHILL GAS-WORKS,
*Sept.* 3, 1871.

Gentlemen,—The No. 6 Paragon Pump supplied by you has satisfactorily performed the work for which it was ordered—viz., feeding the boiler and pumping up water for the use of the works. In my opinion, it is a very compact arrangement, the working parts are thoroughly enclosed and protected, and the valves are very simply and quickly got at. It is a useful and reliable auxiliary.

Yours truly,

Messrs. Kittoe and Brotherhood. H. T. EVERIST, *Manager.*





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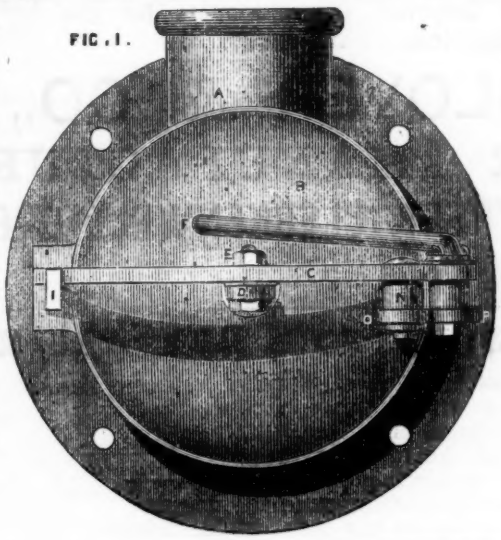
Several hundreds in use at the works of the London Gas Company.

FIG. 1.



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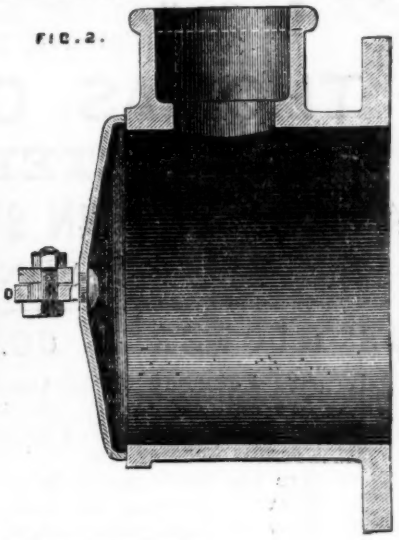

Adopted in the Gas-Works at

LIVERPOOL,
DUBLIN,
NOTTINGHAM,
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BOURNEMOUTH,
WINDSOR,
BOSTON,
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**REQUIRES NO SHAFTING, GEARING, RIGGERS, OR BELTS.**

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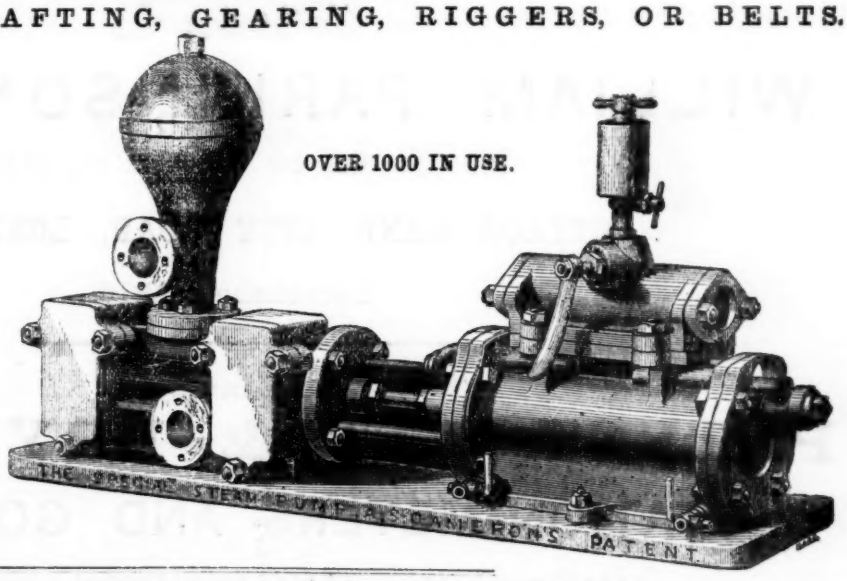
Aylesbury Gaslight and Coke Company.
Alliance and Dublin Gas Company.
Bolton Gas-Works.
Burslem and Tunstall Gas Company.
Brighton Gaslight and Coke Company.
Bury St. Edmund's Gas Company.
Burnley Gas Company.
Bradford Gaslight Company.
Corporation Gas-Works, Stockton.
Chartered Gas Company, Westminster.
Cork Gas-Works.
Dewsbury and Batley Gas Company.
Dublin Consumers Gaslight and Coke Company.
Dunstable Gas-Works.
Imperial Gas-Works, St. Pancras.
Ipswich Gas-Works.
Kingston-upon-Hull Gaslight Company
London Gaslight Company, Nine Elms
Lewes Gas-Works.
Louth Gas Company.
Middlesbro' Gas-Works.
Northampton Gas Company.
Phœnix Gas-Works, London.
Richmond Gas Company.
Rio de Janeiro Gas Company.
Reading Gas-Works.
Shipley Gas-Works, near Bradford.
St. Albans Gas-Works.
Sutton, Southcote, and Drypool Gas Company, Hull.
St. Helen's Gas Company, Lancashire.
Windsor Royal Gaslight Company.
Wandsworth and Putney Gas Company.
Woolwich Equitable Gas Company.
Western Gas-Works, Kensal Green.




OVER 1000 IN USE.

## IMPORTANT TESTIMONIALS.

*Manager's Office, Local Board Gas-Works, Middlesborough, March 19, 1868.*

Dear Sirs,—In reply to your inquiry, I beg to say that the "Special" Steam-Pump, which you supplied to these works some months ago, has been at work ever since for pumping tar and ammonia water. I like it well, and am more than satisfied, for I am really pleased with its mode of doing double duty.

I am, very respectfully yours.

JOHN DUNNING, Manager.

Messrs. Tangye Brothers and Holman.

*Richmond Gas Company, Manager's Office, Gas-Works, Richmond, June 17, 1868.*

Dear Sirs,—I have the pleasure in stating that the three "Special" Steam-Pumps which we have in use—viz., one for water, one for pumping liquor through the scrubbers, and the other for filling tar barges, &c., are working well in every respect, and, I think, cannot be too highly recommended.

Yours truly,

JAMES ELDRIDGE, Manager.

Messrs. Tangye Brothers and Holman.

*Sutton, Southcote, and Drypool Gas Company, Hull, May 1, 1871.*

Gentlemen,—In reply to your note No. 410, April 29, I am very glad to inform you, that in a few hours after I got the pump started, and after I had written you, it did its work beautifully, and has continued to do so, throwing one day 4000 to 5000 gallons per hour, although you say 3250 gallons is its capacity. It is a splendid pump, the best I ever saw, and has just emptied a tank 82 feet diameter by 16 feet deep in 100 hours. I should have written to you some days ago had your note come earlier.—Yours truly,

F. W. OLDFIELD, Manager.

London, 1851. New York, 1853. Paris, 1855. London, 1862.

Dublin, 1865.

The SIX MEDALS AWARDED to THOMAS GLOVER for

**PATENT DRY GAS-METERS,**

The latter being the Highest Medal awarded for Dry Gas-Meters by the Imperial Commissioners for the Universal Exhibition, Paris, 1867.

Paris, 1867.

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## DRY GAS-METER MANUFACTURERS,

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1st, Are a remedy for all the defects of Wet Meters;
2nd, Are suitable for all climates, whether hot or cold;
3rd, Incur no loss of Gas by evaporation;
4th, Cannot become fixed by frost, however severe;
5th, Are the most accurate and unvarying measurers of Gas;
6th, Prevent jumping or unexpected extinction of the Lights;
7th, May be fixed either above or below the level of the Lights;
8th, Cannot be tampered with, without visibly damaging the outer case;
9th, Will last much longer than Wet Meters;
10th, Will not cost more than one-half for repair that Wet or Water Meters do;
Are upheld for five years without charge.

# WILLIAM PARKINSON & CO.,

(SUCCESSORS TO SAMUEL CROSLEY,)

**COTTAGE LANE, CITY ROAD, LONDON, E.C.**

**Established 1816.**

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## PATENT WET & DRY METERS,

## STATION-METERS AND GOVERNORS,

**PRESSURE REGISTERS, GAUGES,**

**EXPERIMENTAL METERS, PHOTOMETERS, GASHOLDERS, &c., &c.**

## WATER METERS.

**W. P. & Co. beg to state that they are now prepared to supply Station-Meters with planed joints.**

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*No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.*

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# THE JOURNAL OF GAS LIGHTING, WATER SUPPLY, & SANITARY IMPROVEMENT.

*TUESDAY, DECEMBER 5, 1871.*


## Notes upon Passing Events.

One of the most substantial street improvements that London has seen for many years, was opened on the evening of the 20th of November, without the slightest ceremony. The barriers were pulled down—the street boys rushed in with a shout—a butcher's cart raced with a Hansom for the first honours, and a street fifty feet broad, with gradients that any loaded van can trot up, was opened between Holborn Viaduct, Fleet Street, Ludgate Hill, and Bridge Street, Blackfriars. If at the east end the new street to the Docks, proposed by Mr. Haywood, were made, the traffic from the East, which is now forced through the narrow ways of the City, until it reaches Queen Victoria Street on the one side, or Newgate Street on the other, would find substantial relief. We have nothing to say against the Metropolitan Board's project of a new thoroughfare from the corner of New Oxford Street to Old Street—every new street of the kind must be a boon to the public; but it will not relieve the dock traffic, so much of which must make its way either across the river or up to the district round Holborn Viaduct. A new bridge across the Thames, somewhere near the Tower, is urgently required; but pending its execution, it would be a great point to let in traffic to or from the Docks by way of Blackfriars. We have before now pointed out the advantages reaped through the competition between the City Corporation and the Metropolitan Board, but in the case of the streets projected for assisting East-end traffic there is a disadvantage, because the scheme of both might be with advantage modified and amalgamated. The Metropolitan Board, wisely warned by past opposition, will not touch the City proper if they can help it; and yet it is the City which most suffers from a plethora of carts and waggons, and which is, if the Metropolitan Board scheme is carried out in its entirety, to be left out in the cold. Perhaps the parliamentary committees will put this difference to rights by a fusion of the two schemes, and compel the two kings to "smell at the same nosegay." Our incidental remarks the other day on the absurdity of the streets of London being under one authority and the bridges under another, are supported in a very undeniable manner by a letter in the *Times* from a correspondent "who has been in the habit of passing over Blackfriars at a very early hour for upwards of thirty years." He says:

> During any frost, never do I recollect witnessing similar scenes to those I saw this morning on the new bridge. During the space of one hour I witnessed upwards of 30 horses fall in their endeavours to ascend the bridge from Blackfriars Road alone, and many others which succeeded in reaching the summit fell in attempting to make the descent into the City. In the centre of the bridge some fine bullocks, which the drover informed me should have been at the market by four o'clock, were lying in all directions, totally unable to stand. The drivers of the heavy meat vans from the southern railway stations, with two or three additional horses taken from other vans, were making strenuous efforts to get over. A few succeeded, but many abandoned the attempt, and eventually proceeded to some of the other bridges. The coal waggons were entirely stranded, and the pathways almost impassable.
>
> Now, it will scarcely be believed, but it is a fact, that although this state of things had been occurring all through the night (early in the evening a horse was lying dead on the bridge, waiting for the knacker's cart), up to six o'clock this morning not one load of gravel, sand, or breeze had been sprinkled on the bridge.
>
> It may be thought sufficient by the members of the Bridge House Committee Estates to order this sprinkling to be done at seven or eight o'clock in the morning, but if one of its zealous members would arise from his slumbers and visit the bridge about four o'clock during a frost, he would see the advantage, and the saving in horseflesh it would effect, if the remedy were ordered to be applied in the middle of the night, previous to the setting in of the heavy traffic from the south to the north, or *vice versâ*.

The Bridge House Committee, if they are asked, know nothing about it; they leave everything to their officer, the architect, Mr. Horace Jones, who has no permanent staff for attending to a matter that only requires attention during the few days of frost. Mr. Jones is a gentleman of exquisite taste in details. The Guildhall decorations do him infinite credit; we have no doubt that the Guildhall library will be extremely nice. It is positively barbarous to call on such an artist to attend to such details as clearing away mud, collecting horse dung, and distributing sand. These things properly belong to the Commissioners of Sewers, the managers of the streets—to their Engineer and Surveyor, in whose mouth all that appertains to street-cleaning is familiar as "household words." What a capital thing it would be for the owners of wheeled vehicles compelled to cross the Thames, if all the pavements were given up to Mr. William Haywood, and all the decoration of the City to Mr. Horace Jones. We do not suppose that either of the officers would object to this arrangement, so long as it did not injuriously affect their salaries. As it is, Mr. Jones has, nominally at least, a great deal too much to do for his salary; but then there is the Bridge House Committee to be considered, and that happy alderman with no constituents. Their dignity would never permit a change so plainly dictated by common sense, so manifestly advantageous to the public.

At length, according to parliamentary notices, the South-Western is making an attempt to escape from isolation, and obtain at one stroke a first-rate City and West-end terminus. This is to be done by extending a branch through into the District Railway at Fulham and West Brompton, thus giving booking stations everywhere from Cannon Street to Moorgate Street. Thus all the Kew, Richmond, Hampton Court, and Wimbledon suburban residents will be relieved of the nuisance of the change at Charing Cross, and Waterloo Station will retire into the obscurity it is "so well calculated to adorn." This arrangement justifies the directors of the District Underground in deferring negotiations

for amalgamating their undeveloped traffic with the more prosperous Metropolitan. The Midland, which was once thought to be snuffed out by the Great Northern, has still bolder and, in our humble opinion, more unnecessary schemes—first by joining the Metropolitan at Praed Street, which is all very well, and not too expensive; and next, by taking up the St. John's Wood line, which considers itself ill-used by the Metropolitan, and pushing on to a West-end station somewhere about Green Street, Grosvenor Square—all underground. We cannot understand the financial sense of this scheme, looking at the half million a mile that underground lines must cost, and at the fact that a cheaper and more convenient connexion with all the lines in the Euston Road might be made by a tramway commencing at Paddington Green, continued to the foot of Pentonville Hill, and there turned along Gray's Inn Road to Holborn, and by new St. Andrew Street to the south side of Blackfriars. Mr. John Fowler, as shrewd an engineer as any that exists, observed to a parliamentary committee, that where tramways began he thought railways must leave off. The managers of railways, if they be wise, will treat tramways as feeders, not as competitors.

We hear of a renewal of a scheme for a railway to the City, under Oxford Street. This is a big job. The shopkeepers will oppose it; so they did a tramway; but if they study the working of tramways in other parts of the metropolis, they will learn that while underground railways take all passengers out of sight of their shops, tramway cars, so easy to ascend or descend from, are the arrangements that of all others bring customers out, tempted by rides so easy and so cheap. Hundreds, perhaps thousands, who would never venture in the stifling crush of an omnibus, patronize the roomy, low-set tram car.

The scheme for tunnelling between Dover and Calais has founded something at last; it has been made the claim of a candidate for parliamentary honours. Mr. Barnett seems to be a bi-handed gentleman; he claims credit for approving a scheme that, if successful, will do away with passenger packets, take away the employment of their sailors, stewards, porters, and all the odd men who live by the scramble; and, on the other hand, he promises to support the monopoly of pilots, who now can claim fees from shipowners who do not require their services. But perhaps Mr. Barnett considers these promises harmless, as he feels sure that, in spite of his vote, if ever he has one, compulsory pilotage will be abolished, and, in spite of his studies, the tunnel across the Channel will not be commenced within the life of the present House of Commons. In the meantime, it is reported that the improvement of Calais Harbour is under consideration by the proper authorities, with the view of admitting steamers as large as those employed at Holyhead, and that Baron Rothschild, the proprietor of the Great Northern of France, has ordered engineers to prepare plans for a new port near Calais, fit to accommodate Mr. Fowler's steam raft.

At Liverpool a scheme has been devised, and will be submitted to Parliament this session, for a tunnel under the Mersey. The engineers are studying the subject. We presume the railroad companies have or will find the capital. Such a tunnel is less difficult than many existing tunnels, and would have two important results. It would make those magnificent Birkenhead Docks part of the Liverpool system—now overcrowded—and it would make the Cheshire side of the river a more accessible suburb for the wealthy men of Liverpool than any steam ferry can; the Lancashire side being, with the exception of a narrow section, one of the ugliest districts for villas in Europe—worse than the suburbs of Hamburg.

The journals with whom everything that is, is wrong, have been making some capital of a fiction—invented for the purpose—that the Post-Office was about to lose the services of Mr. Scudamore—that he was about to retire, because his pension would be within five hundred a year of his present salary. After a great deal of virtuous indignation by Opposition journals on the texts of cruelty, folly, and injustice, Mr. Scudamore knocked the theory on the head by writing to say that he had no intention of resigning. If he loves power, patronage, and the internal satisfaction of feeling that he is serving his country by practical reforms, there is no reason why Mr. Scudamore should resign. If he wants to make as much money as possible and be his own master, instead of being under the authorities of the Post-Office and of the Treasury, there are many reasons to incline him to resign. If Mr. Scudamore has half the business ability for which he has credit, he will find many public companies and private individuals competing for his services at a salary of not less than a thousand a year and contingent advantages; but the idea that the Treasury, or any other department of the State, is committing a sort of crime in from time to time overhauling the persons and the salaries of public offices, is an absurdity natural to those who think that it is the special duty of Government to provide for the stupid clerks and lazy mechanics who naturally gravitate toward situations where the inevitable routine and multiplicity of subordinates are fatal to all originality and zeal. But when new things are to be done, and new ways introduced, it is often necessary to get rid, by the temptation of a pension, of a number of honest, punctual, slow, industrious, middle-aged, dull, plodding persons, who cannot be made to trot, or leap an obstacle, at any price.

People who know anything about the subject are beginning to find out that Mr. Reed was not any loss to the Admiralty after all, for the reasons illustrated in the following anecdote:—A gentleman who thought of taking shares in Mr. Reed's Hull Shipbuilding Company consulted an engineer, not a manufacturer, who knew the late Chief Constructor of the Navy very well. His answer was, "*Don't.*" When pressed for reasons, he said: "Mr. Reed is clever—too clever; he will never allow "that any one is clever except himself, or admit that he could "make a mistake. He will work the company to carry out his "own crotchets. That may be done with a nation's purse to "draw on; it will not do in a commercial undertaking."

The defeat—the very proper defeat—of the Metropolitan Board by Mr. Brunton, the solicitor, who lived in Mayfair, and who was very near having his greenhouse pulled down on the strength of a notice left at the deserted office of an emigrant builder, adds one public example to the many of the absurdities and tyrannies embodied in the Metropolitan Building Act. This Act is equally defective in what it does and what it does not do, and requires a thorough investigation by a committee of architects, surveyors, and builders—the experts who alone are competent to draft the required amendments. At present there is very little security against the use of materials of the most abominable quality, while a crotchety or dishonest surveyor may put honest people to extraordinary and needless expense. One surveyor thinks only of his fees; another hates iron, and has no faith in anything but a brick pier. Between them, building is very much discouraged.

The approach of Christmas calls into activity the exertions of many charitable societies, some under the control of really honest and intelligent managers; others—and these are not few and far between—are the outcrop of rival bigots, snug sinecures for nine months of the year for secretaries and treasurers, and the means of finding occupation for meddling busybodies whose stock-in-trade is composed of parrot-like repeated texts and ejaculations. A large octavo volume has recently been published to record the literary life of the Rev. William Harness, Vicar of All Saints, Knightsbridge, an accomplished, sensible, and pious man who died—was killed, in fact, by a fall two years ago at a very advanced age. The life is a terrible specimen of book-making out of very scanty materials, by a friend of the deceased, who has no qualifications for the task except his love for the subject of it. A little volume of half the size and half the number of pages, printed on thick paper and very large type, would have told all that there was worth telling; but there is one chapter worth the whole price of the book—a reprint of an article published in *The Times* and as a pamphlet in 1844. Twenty-seven years have not destroyed its best points. The Bishop of London proposed to establish a Metropolitan Visiting and Relief Society. Mr. Harness was strongly opposed to the scheme. Public charities create the necessity they relieve, but do not relieve half the necessity they create. He strongly objected to the distribution of relief except under the supervision of a responsible, well-qualified officer; and he proceeded to call attention to the effect of an announcement in all the papers of a new association for promoting the relief of destitution in the metropolis. "No sooner had these advertisements made known over "the kingdom that such a scheme, supported by Royal patronage, "and managed by patrician directors, was in agitation, than "multitudes of the labouring classes who were not very well off "in the country, begged their way to London to get a share of "the funds." The very same thing occurred during the national contributions to East-end distress. The sum already collected appeared immense. New subscribers were adding daily to the amount. What it might eventually become, none could calculate. At once London was looked upon as the El Dorado of the indigent, and thither every adventurous pauper bent his way. They believed—and they had high, royal, noble, and episcopal authority for believing—that all might fill their bellies by applying to the stores of the "Metropolitan Visiting and "Relief Association." There always will be distress in London, the refuge of the destitute, "but this announcement doubled and "trebled it." At the outset, a great injury was done "to the "labouring poor of London. A multitude of strangers was in- "troduced to compete with them for employment. These emi- "grants from the country came also to drain those charitable "supplies of coal and bread, of flannels and blankets, of soup and "potatoes, which rightfully belong to our resident mendicants, "and which they had counted on as part of their winter re- "sources." Mr. Harness then proceeds to show the working of the scheme in a vein worthy of Sidney Smith:

The Rev. Mr. A——, Incumbent of B——, is anxious to show his respect for his diocesan by acting in correspondence with your lordship's views. He is also not unwilling to possess himself of a portion of the funds, which he finds are at the disposal of the general committee, and which he thinks may be very well expended on some of his more indigent parishioners. Stimulated by this compound motive, he summons a certain number of his more steady church-goers and frequent communicants to meet him in his school-room, reads Mr. ——'s circular to them, lays before them as much as he can collect of the scheme proposed, states his intention of adopting it in his own parish, and requests the favour of their co-operation as visitors. Now, who are these visitors to be? The noblemen and gentlemen of the general committee do not seem to have contemplated any difficulty on this score. Every obstacle is evaporated before the glowing heat of their enthusiasm, like clouds before the sun. Speak to them of visitors, and it matters not where the parish, or what the population, their active fancy instantly conjures up a group of Christian ladies and self-denying Christian gentlemen, with knowledge equal to their zeal, and zeal proportioned to their knowledge, with plenty of time at their disposal, and willingness (at a hint from their pastor) to spend it all in the service of the poor; with humility which can meet every man on terms of equality as a brother, with gentleness which can never offend, with charity which can sympathize with every description of distress; with a quick insight into character which intuitively distinguishes the true from the false—the sufferer from the impostor; and with a nice tact and judgment which, apprehending at a glance the nature of the ill to be relieved, never allow them to be mistaken as to the best mode of administering the relief required. Such are the qualities necessary to form a good visitor of the poor, who is to go, a stranger among strangers, to deal with affliction in all its variety of forms, and with imposture in all its Protean transformations. Can the general committee really suppose that the characters fitted for such an office are readily to be met with? or that, when met with, they will require no discipline or education to prepare them for its duties? Talk of the imaginative powers of the lover, the lunatic, or the poet! Why, such persons are not half so "compact of imagination" as the staid members of this new joint-stock charity association! A very few days since, one of its zealous supporters told your lordship's correspondent that "nothing was easier to be met with than men and women calculated to act as district visitors, for the only qualities required were "*sincere religious principles and sound common sense.*" Nothing more! The two rarest qualities in the world to be found apart; and, of course, still more rare to be met with in union. But supposing the parish of B—— should be most highly blessed, and be peculiarly rich in individuals of this happy religious and mental constitution, they are precisely the individuals whom the Rev. Mr. A—— will, on establishing his visiting society, endeavour in vain to press into his service. The man of sincere religious principles and sound common sense is, of all others, the least ready to take such charges upon himself. He has his own business to attend to, he has his own duty to fulfil in that state of life to which it has pleased God to call him; he is alive to all its weighty responsibilities; he does not do all he ought, and heartily desires to do more; he knows that in taking upon himself the charge of families of which he has no connexion but of the very loose ties of the same parochial tenancy, he thrusts himself into the responsibilities of those relations or friends, neighbours or employers, who are morally and religiously bound to render them what assistance may be required; and he conscientiously objects to undertake such offices, and thus to violate the Apostles precepts by "stretching himself beyond his measure." But when these, the most valuable members of his congregation, have drifted off from him, where is the Rev. Mr. A—— to look for his coadjutors? He may command the services of the morbid pietist, of the restless fanatic, of the idler who is weary of himself, and of the prying, curious, chattering busybody who wants to know how everybody lives, and to settle everybody's affairs according to her rule. Mr. Timmins has retired from business; he has always finished his newspaper by twelve, and between that and his luncheon at one he will have no objection to see a few poor families in his neighbourhood. Miss Yeddenly and her sister Miss Laura, who have nothing in the world to do from breakfast to dinner, after they have watered the geraniums, cleaned the canary birds, and fed the cat, will be only too happy to undertake any charge to oblige the rector. Miss Groves has a kind of *penchant* for the red-haired curate; and though her mother (who is rather blind and very rheumatic) wishes her to remain at home and read Ellen Middleton to her, she is altogether at the disposal of her spiritual guide. Mrs. Gilks, a widow of small independence and questionable gentility, is delighted to accept an avocation which promises to bring her into familiar contact with the more aristocratic portion of her neighbours. Mr. Docket, the little solicitor, hopes to obtain the advantages of being advertised all over the parish as "the honorary secretary" of the charity, and volunteers the services of his wife and daughter: while Mr. Grills, the butcher, Mr. Allum, the baker, Mr. Crib, the grocer, Mr. Slate, the coal-merchant, Mr. Serge, the draper, and Mr. Sprigget, of the potato warehouse, are all ardent in the cause—partly with a view of pleasing their excellent customer, the rector, partly on account of the beadle-like consequence to be derived from the office, and partly from a consideration of the amount to which their visits among the poor may be remunerated by tickets for articles on their respective shops. But, however, after a little time, the B—— Visiting and Relief Society is formed; the president, the treasurer, the secretary, the committee, are appointed; the number of visitors is complete; the grant from the great central fund has been paid, and is increased by a numerous list of annual subscriptions; the parish is divided into districts, and a certain number of ladies and gentlemen appointed as superintendents to each. You set up an office for the distribution of unearned food and fuel. Immediately all the idle and improvident, the drunken and the dissolute, will flock to the scramble, and these will be followed, in rapidly increasing numbers, by others, whom the display of the gifts bestowed upon the first applicants will tempt away from their daily labour to try the chance of winning for themselves a share of those fruits of idleness which are at first so sweet in flavour, but which have so bitter an after-taste. But I will return to the Rev. Mr. A—— and the B—— Visiting Society. It is now ready for business; the season for its operation has commenced. Work is slack; the snow is on the ground; and there is a considerable degree of distress among the inhabitants of the poorer districts. The visitor sets out upon his round, to do his best towards discovering where it presses most severely, and to apply, as judiciously as he can, the funds entrusted to him for its relief. I will put no imaginary case; I will only describe such circumstances as I have known to exist, and are fresh in my recollection. He comes to a house inhabited entirely by labouring people—a family in each room. On the first floor, in one apartment, he finds a man, his wife, and two children. They have every comfort about them. The husband is a shoemaker, the wife helps at the binding, the eldest child is sent to school at twopence a week, the other is too young to leave the mother. At present their whole earnings do not exceed 10s. a week; but they had saved some money in the summer, and they hope to be in receipt of better wages in the spring. In the other apartment lives a man with his wife and child. He is also a shoemaker. His room is filthy, offensive in smell, and destitute of any furniture, except his bench, a black tea-kettle, two or three articles of damaged earthenware, and a lump of dirty shavings, which, with some old horse-cloths, are bundled up in a corner of the room by day, and spread out at night to serve the family as a bed. The circumstances of this man, as to the amount of his weekly earnings, are precisely those of his neighbour in the next room, though in one sense he is better off, for he has only one child to feed, and no schooling to pay for. But he earns only 10s. a week. This must supply him, his wife and child, with lodging, clothing, food, and firing. In the spring, summer, and autumn he had higher wages; but then he owed a large bill at the shop, and had spent the rest, so that now he is really in a state of poverty, having borrowed whenever he could find any neighbour to lend, run in debt wherever he could get credit, and pawned every article of dress or furniture on which a penny could be raised.

Here there are two cases, in which the visitor is called to take an active part. Will he not give to either? Then he may as well fling his journal, his relief tickets, and all the apparatus of a district visitor into the fire. The distress has been caused by imprudence and vice; but if for that reason he refuses to help misery, he will find few claimants on his benevolence. If he assist this one, the visitors tickets for bread and coals render this unworthy fellow's income for the week far better than that of the industrious, independent, high-minded man who is bravely struggling against his difficulties on the other side of the partition which divides their rooms. Alms so given operate to all intents and purposes as a premium on vice and a great discouragement to virtue.

## Circular to Gas Companies.

We regret to say that since our last two other deaths have resulted from the explosion at the Leeds Gas-Works. It will be remembered that Mr. Scholefield, the resident manager, who displayed great courage on the occasion, received a severe wound on the head, and was also badly burned about the lower part of his body. The engineman, Rhodes, was also badly burned. They have both died, the medical witness expressing an opinion that their deaths were occasioned by blood poisoning by the tar which, scattered by the explosion, covered the lower parts of their bodies.

The evidence produced at the inquest is, unfortunately, but meagrely reported; enough, however, is given to show the probable—we might say certain—cause, or rather causes, of the catastrophe. Putting together the evidence of the three experienced engineers who were examined at the inquest, we can only arrive at the conclusion that there were at the time three causes in operation to produce an escape of gas. In the first place, according to Mr. Unwin, the 280 retorts at work were charged too fast by the men, anxious, no doubt, to finish their Sunday night's labour. In the next place, it would appear from the evidence of Mr. C. Smith, the chief gas manager of the Leeds Corporation, that the purifiers were greatly overloaded with the purifying material—sulphate of iron and sawdust. In these two facts we see the reason for a greatly increased pressure on the syphon-box, and are thus brought to the cardinal defect in the arrangements. It seems that the syphon-box was only 18 or 20 inches deep, and the dip-pipe, at the most, would have but 16 inches of seal. It is clear this would be altogether insufficient to resist any extraordinary pressure thrown upon it, and leaves no doubt whatever as to the cause of the escape. The verdict given by the jury was in accordance with these facts. The explosion was considered accidental, but a recommendation was made that the syphon-boxes and dip-pipes should be made deeper, and wherever practicable brought out into the open air.

To the recommendation of the jury no objection, of course, is to be made, but it is not always practicable or convenient to place self-acting syphon-boxes in the open air. This much, however, can always be done—they can be placed in situations where they are readily accessible, and proper means can be provided for keeping them always full of water.

There is only one other thing in connexion with this unfortunate affair which calls for observation, and that is the neglect of the lamented manager to have all exposed lights and fires extinguished when he was conscious that an enormous leakage of gas was taking place. Endowed with rare courage and much presence of mind, Mr. Scholefield overlooked the one thing which constituted the real danger. That oversight unfortunately cost him and others their lives, and the moral for managers, under similar circumstances, is—first put out the lights, and then look for the seat and remedy the cause of the escape.

Sheerness is threatened, so far as public lighting is concerned, to be reduced to the condition of Paris in the early years of the 16th century. Our readers will remember that there has been a feud of long standing between the Local Board—or perhaps it would be more correct to say the chairman of the Local Board—and the Sheppy Gas Company supplying the town. In June, last year, the Board endeavoured to compel the gas company to reduce the charge for public lamps from £3 16s. to £3 per annum, by a threat that, in case of refusal, the Board would erect works of their own under an Act of Parliament which might possibly allow them to supply a certain portion of their district if any authority could be found to allow the raising of the money necessary for the works. The chairman believes that the Board have the power to erect gas-works, and no one has told him authoritatively that they have not. But the question is, where is the money to come

from? And only echo answers, "Where?" In this state of the question, and at this period of the year, it is hardly conceivable that the Board should have given notice to the company that the contract for public lighting would terminate on March 31 next year, and announce that if the Board had not erected gas-works before, the public lamps would be lighted with oil after that date. Such, however, is the fact, and such is the prospect before the inhabitants of Sheerness. What they think of it we do not know; but in any case they can hardly blame the gas company for bringing things to the present crisis. The company have made every possible concession. They have offered to have the charge fixed by arbitration, as is provided for by the Gravesend Gas Act, or to charge for the lamps on average meter indication, as is now provided for by many Acts of Parliament; but they very properly deny the right of the chairman of the Local Board to dictate to them the terms on which they shall supply their commodity. How far the chairman is correct in his opinion that the Board have power to erect gas-works to supply even a limited area, remains to be seen. He was singularly unfortunate in his reading of the law at the last election of members of the Local Board, and has, in consequence, been condemned to pay a fine of £35, with £5 costs, for negligence in making an incorrect return. A stretch of magnanimity relieved him from a charge of gross partizanship, which would have greatly darkened the complexion of the case, and perhaps he may now feel better disposed towards his opponents. It rests, however, with the inhabitants of Sheerness to say whether or not they will tamely submit to the state of things the Board proposes to inflict on them. If they do not object to the return to oil lamps, we have nothing to urge against it. We must say, however, that the proceedings of the Local Board are altogether contemptible, and if another such instance could be found in the kingdom, it might shake our faith in the capacity of Englishmen for self-government.

The list we publish to-day of applications for Private Bills in Parliament, and for Provisional Orders from the Board of Trade, under the Gas and Water Works Facilities Act, shows twenty-one applications from companies and local authorities for Bills in connexion with gas undertakings, and twelve applications from companies for Provisional Orders. The two most important Bills will be that of the Chartered Company and the South London Bill we noticed last week. The competing schemes are few in number. Among the notices is one by the Hindley Local Board, for a Bill to make a compulsory purchase of the undertaking of the Hindley Gas Company, and an alternative Bill to authorize the erection of competing works. It would seem that the company are not desirous of parting with their undertaking, since they also give notice of a Bill to obtain statutory powers and extend their district. Two companies appear to compete for the supply of Altrincham, in Cheshire. The Altrincham Gas Company—a company actually supplying the district—and a North Cheshire Company, started as a competing company; and two others will again contend for the supply of Barnet, Enfield, and surrounding districts in Middlesex and Hertford. The Corporation of Bolton give notice of a Bill to purchase the undertaking of the Bolton Gas Company; and the Elland Local Board have two notices—one for a Bill to authorize the sale or lease of the undertaking of the Elland-cum-Greetland Gas Company, and the other to empower them to erect works. Applications are also made by the local authorities of Aberystwith, Birstal, Haworth, and Lymm for Bills to empower them to purchase gas undertakings in their several localities.

The Corporation of Sheffield give notice that they will make another attempt to effect a compulsory purchase of the Sheffield Water-Works Company, and they have notice of a Bill to legalize and provide for the payment of the costs of their past proceedings in connexion with the water company.

There are many of our readers who, with ourselves, will offer their congratulations to Alderman Cowen, of Newcastle, on receiving the honour of knighthood. Mr. Cowen's long services in connexion with various branches of local government in his neighbourhood have well entitled him to the distinction Her Majesty has graciously conferred.

Our subscribers will receive with this number of the JOURNAL the third of the additional plates of the Beckton works. This plate gives the details of the purifying-house, showing the mode of working the purifiers.

## Correspondence.

### RATING OF GAS-WORKS.

SIR,—The Commissioners of Income-Tax have this year assessed the company which I represent upon the amount written off yearly from the value of works as "deterioration." I have appealed to the local commissioners, and also to the Inland Revenue Board, but without success, as they refuse to admit that "deterioration" is a deduction they can allow. Will any of my fellow-secretaries inform me if this course is the usual one, and if their companies all pay on this charge as a portion of profits? SECRETARY.

### THE LEEDS GAS EXPLOSION.

SIR,—Will you kindly allow me space in your valuable journal for a few remarks in reference to the explosion of gas at the Leeds Corporation Gas-Works, New Wortley?

The cause of the explosion is supposed to have been the overcharging of the purifying-boxes and the shallow syphon-box, but I have reason to think that the explosion occurred from another cause, namely, the unsealing of the syphon-box by the difference of temperature in the gas between the outlet of the condensers and the said syphon-box.

Suppose it to have been the overcharging of the purifying-boxes, the pressure would not have been thrown back suddenly, but gradually, and the man in charge of the engine ought to have perceived it at the outlet gauge of the exhauster before it got up to 20 inches. Again, why was not the sealing blown out of the dips of the purifying-boxes, as they were only 18 inches deep, and, as Mr. Smith, the engineer, said, the sealing in the syphon-box 20 inches; but I believe the syphon-box was not full of liquor at the time, but had been unsealed, as I have said before, by the difference of temperature in the gas. Gas will take up liquor as well as deposit it, if the temperatures are favourable for it.

I have an hydraulic valve and draining syphon in the purifying-house at these works which have to be filled up every week in winter, but in summer they are sealed with condensation. The above remarks have been made with a view of drawing the attention of managers to the dangerous character of hydraulic valves and syphons in similar situations, and what I believe to be the primary cause of the explosion. If I may be allowed to give a word of advice, I should recommend a weekly inspection, especially in the cold winter months. JOHN TINDALL, *Manager*.

*Gas-Works, Walsall, Dec.* 1, 1871.

## Legal Intelligence.

### VICE-CHANCELLOR'S COURT.—THURSDAY, NOV. 23.

(*Before Vice-Chancellor Sir* R. MALINS.)

WEBSTER *v.* THE CORPORATION OF HALIFAX.

This cause was put on the paper again this morning, upon the application of the defendant's counsel, and when it was called,

Mr. COTTON, Q.C., stated that his clients were desirous of substituting an undertaking for his honour's decree. The corporation were ordered to remove the pipe laid alongside the conduit, and the pot-pipes inserted into the conduit, and to close the openings in which the pipes had been inserted in a substantial manner, so that no water from the plaintiffs land should go into the conduit. In place of this, without disturbing the award of £300 to the plaintiffs for costs, they proposed to enter into an undertaking to make the conduit water-tight, to the satisfaction, within such reasonable time as should be determined, of an engineer to be agreed upon between the parties.

Mr. GLASSE, Q.C., was unwilling to accept the proposal. Before the decree was made the defendants were asked and declined to give such an undertaking, and now that it was offered after an adverse decree, the plaintiffs preferred to abide by the decision of the court.

The VICE-CHANCELLOR understood from the offer now made that the corporation had abandoned all idea of appealing against his decision.

Mr. COTTON: Certainly, if our undertaking is accepted, but, of course, I make the offer without prejudice to my right of appeal.

After some conversation, in the course of which the VICE-CHANCELLOR expressed the opinion that the corporation had taken a very reasonable and becoming course, but intimated that without the consent of all parties he had no power to alter his decree, it was agreed that the matter should stand over till the 5th of December, to give the plaintiffs an opportunity of considering the proposal now made by the corporation.

### COURT OF COMMON PLEAS.—SATURDAY, DEC. 2.

(*Sittings at Nisi Prius, in Middlesex, before Justice* BYLES *and a Common Jury.*)

WARREN *v.* WILDEE.

The plaintiff in this case claimed damages for personal injuries suffered by her in consequence of an explosion of gas.

Mr. WILLOUGHBY and Mr. POYNTER appeared for the plaintiff; and the defendant conducted his case in person.

The case for the plaintiff was that she had been for seven years barmaid to the defendant, who was the proprietor of the Franchise Tavern, Franchise Street, Holloway, and on the 4th of October, 1870, there was a smell of gas. The defendant went into the counting-house with a "swab" and a piece of string to bind round a gas-pipe there. He also had with him a lighted candle, and the consequence was that there was a violent explosion, and the plaintiff, and also the defendant, was very seriously injured. The plaintiff was burned about the head, face, neck, hands, and arms so badly that her clothes could not be got off for five days, and then they were cut or torn from her. She was also a good deal cut about the neck. She was confined to her mother's house for five weeks, and then, at the defendant's request, she went back to do what she could in superintending the business of the tavern. She finally left on the 24th of December last, but she was even now not sufficiently recovered to be able to take another situation. She was weak and nervous, whilst before the accident she was a strong and healthy woman. The medical evidence was that she would not be fit for active employment for months to come.

Evidence was given to show that the gas-pipes in the defendant's house were out of order in more than one place, that on the 2nd of October he had a chandelier repaired, and that on more than one occasion his attention was called to an escape of gas. The pipe which was the immediate cause of the explosion had a fissure in it, which one of the jurymen, a gas-fitter, pronounced to be a "natural defect," and had always been in the pipe. There was also evidence that upon this pipe, and also upon the pipe in the chandelier, there was "putty, grease, and muck," which had apparently been used with the intention of stopping escapes of gas.

Justice BYLES doubted very much whether there was any case to go to the jury, but said that he should leave the case to them, and reserve leave to the defendant to move the full court for a nonsuit. A master was not liable for injuries that a servant suffered in the ordinary course of his employment.

Mr. WILLOUGHBY contended that in this case the master, by his want of care, had exposed his servant to unreasonable and unnecessary risk.

The DEFENDANT addressed the jury, and said he had always been particularly careful in reference to gas, and he denied that he had ever taken the "swab" for the purpose of mending the pipe.

Justice BYLES left it to the jury to consider whether the defendant had exposed the plaintiff to any unreasonable risk, and drew their attention to the fact that whatever the plaintiff's risk, the defendant's own risk must have been still greater, because he was on the immediate spot where the explosion occurred.

The jury found for the plaintiff—damages £20.

Justice BYLES told the defendant that no proceeding would be taken upon this verdict until after the first four days of next term, and he could apply to the full court for their opinion as to whether the action would lie.

## Parliamentary Intelligence.

### NOTICES GIVEN FOR PRIVATE BILLS RELATING TO THE SUPPLY OF GAS AND WATER, AND TO SEWAGE IRRIGATION.

ABERYSTWITH IMPROVEMENT AND WATER.—Powers to construct additional water-works; purchase of gas-works; purchase or lease of slaughter-houses; compulsory purchase of lands, springs, and easements; purchase or lease of lands for markets, &c.; to establish markets; to supply water and gas; levy rates, &c.; extension of district; power to corporation to sell or lease lands and slaughter-houses, and to appropriate purchase-money; to restrain the levying of turnpike tolls and highway rates within extended district; powers to commissioners to make bye-laws; to borrow money; repeal, incorporation, and amendment of Acts; and other purposes.

ALTRINCHAM GAS.—Repeal of Deed of Constitution of Altrincham Gas Company, and reincorporation of company with powers for manufacturing and supplying gas within the township of Altrincham and surrounding districts; power to maintain and improve gas-works; money powers; agreements with public bodies and others; amendment of Acts.

BARNET CONSUMERS GAS.—Dissolution and reincorporation of the Barnet Consumers Gas Company; powers to purchase lands compulsorily or otherwise, to construct works, and to supply gas within the parishes of Chipping Barnet, Ridge, Shenley, North Mimms, and Northaw, all in the county of Herts; and Monken Hadley, South Mimms, and Enfield, all in the county of Middlesex; purchase of undertaking of, and amalgamation with the Potter's Bar Gas and Coke Company; dissolution of that company; sale of surplus land; arrangements with local authorities; powers to levy rates; regulation and increase of capital, and other provisions in relation thereto; and other purposes.

BARROW-IN-FURNESS CORPORATION.—Extension of borough; exemptions from county and parish rates; provisions as to constituting the borough a separate parish, and restricting the exercise therein of powers by churchwardens and other officers of Dalton-in-Furness; powers to enter on lands to repair reservoirs; construction of new gas-works; new streets and widening of street; purchase of lands; provisions as to buildings, sanitary objects, slaughter-houses, trades licences, sewerage, drainage, nuisances, Burial Board, and general improvement powers; provisions as to appointment of stipendiary justices and other officers; new and altered rates and tolls; further borrowing powers; repeal, amendment, re-enactment, and consolidation of Acts; and other purposes.

BIRSTAL LOCAL BOARD.—Purchase of gas-works and confirmation of agreement; transfer to the local board of powers of Birstal Gas Company; dissolution of company; power to local board to maintain gas-works and to construct additional works; purchase of land by agreement for gas-works purposes; to manufacture and supply gas, &c., for public and private consumption; to break up streets, &c.

BOLTON CORPORATION.—Extension of municipal limits and aleration of wards; alteration of Spa Lane; purchase of land for sewage works; powers as to Croal River; extension of water limits and of water-works powers; also of powers of Act of 1864; purchase of South Lancashire Water-Works, and extension of time with respect thereto; supply of water by corporation from their present works to places included within limits of South Lancashire Water-Works Act, 1871; purchase of Bolton Gas-Works; further powers for government and improvement of borough and prevention of nuisances; alteration or repeal of enactments as to Great and Little Bolton Estates; alteration of existing and imposition of new rates; alteration and extension of borrowing powers and other powers; amendment of Acts.

BRIDPORT WATER.—Incorporation of company; construction of works, and supply of water to Bridport and other places in the county of Dorset; powers to Bridport Corporation or local board to purchase, lease, or contribute funds towards undertaking; rates; amendment of Acts.

BRIGHTON CORPORATION WATER.—Purchase by corporation of undertaking of Brighton, Hove, and Preston Constant Service Water-Works Company; extension of limits of supply; rates and charges; rules with respect to fittings, meters, &c.; powers to raise money; agreements between corporation and company; amendment of Acts.

BRISTOL WATER-WORKS.—Increase of capital by shares and borrowing, and by creation of debenture stock; as to consent of preference shareholders under 26th section of the Act of 1862; supply of water to Henbury; amendment of Acts.

BURY IMPROVEMENT AND WATER-WORKS BILL.—Repeal or amendment of Improvement Act, Local Government Acts, and Burial Acts; confirmation of charter; alteration of boundaries; division into wards; exemption from certain rates and turnpike tolls; alteration of mode of electing commissioners; purchase of land for towns yard; purchase of existing markets and fairs, and tolls arising out of same; establishment and regulation of other markets; cleansing of Barn Brook and other streams; purchase of the Bury and Radcliffe Water-Works; construction of new water-works; power to contract with Haslingden and Rawtenstall Water-Works Company for a supply of water, or to purchase their undertaking; purchase of lands; levying of tolls, rates, and rents; consolidation of funds and rates; street traffic; bye-laws; borrowing moneys; transfer of powers and property to municipal corporation; repeal, incorporation, and amendment of Acts; and other purposes.

CARNARVON CONSUMERS GAS.—Dissolution and reincorporation of Carnarvon Gas Company; powers to purchase lands; to erect and maintain works; to light and supply the borough of Carnarvon with gas; power to purchase or lease the existing gas-works at Carnarvon; to sell undertaking to corporation.

CHELTENHAM GAS.—Construction of railway or tramway; crossing of the coach road; compulsory purchase of lands; tolls; stopping up of Alstone Terrace Road; extension of limits of supply; further money powers; amendment of Act.

DARLINGTON IMPROVEMENT.—Construction and maintenance of gas-works, water-works, &c.; manufacture of gas and residual products; taking of lands by compulsion.

DONCASTER WATER-WORKS.—Incorporation of company for supplying Doncaster and the neighbourhood with water; purchase of water-works of corporation.

DUNDEE GAS.—Extension of limits of supply; discontinuance of certain existing works, and erection of new works; additional borrowing powers, rates, and charges; repeal and amendment of Acts; and other powers and purposes.

DUNDEE WATER.—Relinquishment of authorized aqueducts, conduits, or lines of pipes, and other works; new aqueduct, conduit, or line of pipes from Lintrathen to Dundee, and new reservoir and other works; power to take compulsorily and otherwise lands, houses, and other property; powers of alteration of old and new works; borrowing and other powers; power to make and vary agreements with landowners and other parties; enlargement of constitution of commissioners; repeal, alteration, or amendment of Acts; and other powers and purposes.

EDINBURGH AND DISTRICT WATER.—Introduction of improved fittings and apparatus; prevention of waste and contamination; compromise and payment of costs incident to past proceedings in Parliament; procedure of trustees as to future applications to Parliament; election and continuance in office of trustees; borrowing of money; rates and charges; alteration and amendment of Act; and other purposes.

ELLAND LOCAL BOARD OF HEALTH.—Power to the local board to purchase lands by agreement, or to take and hold lands on lease; to construct gas-works; to manufacture and sell gas, residual products, &c., in the local board district, and certain places adjacent thereto; to enter into contracts and agreements with other local authorities, &c., and confer powers on such authorities, &c., and confirm agreements; to levy rates, rents, and charges; to borrow money on mortgage, &c.; to grant rent-charges, annuities, &c.; to stop up, alter, and divert roads, streets, &c.; to confer, vary, and exempt from payment of rates, rents, and charges; to extinguish rights and privileges, and to confer other rights and privileges; repeal, incorporation, and amendment of Acts; and other purposes.

ELLAND LOCAL BOARD OF HEALTH.—Transfer, sale, or lease of the Elland-cum-Greetland Gas Company's undertaking to Elland Local Board of Health; winding up, dissolution, distribution of assets of company; powers to Elland Local Board of Health to purchase, by compulsion or agreement, and hold lands and works; to manufacture, store, sell, and supply gas, residual products, gas-fittings, &c.; to light streets, &c.; to enter into agreements with the Greetland Local Board and other local authorities, &c., for lighting streets, &c., and to confer powers on such authorities, and confirm agreements; sale of gas, &c.; to break up streets, roads, &c.; to levy rates, &c.; to borrow money on mortgage and security of rates, &c.; to grant annuities, &c.; to confer exemptions from payments of rates, &c.; to extinguish rights, privileges, and exemptions, and to confer other rights and privileges; incorporation, repeal, and amendment of Acts; and other purposes.

GLASGOW CORPORATION.—Powers of corporation with reference to water commissioners, and conferring additional powers on them.

GLASGOW CORPORATION WATER-WORKS.—Extension of limits for compulsory supply of water, including within these limits burghs and districts near Glasgow; alteration of limits of Acts; alteration of rates; and new or additional rates; amendment of Acts; and other purposes.

GLOUCESTER GASLIGHT.—Extension of limits of supply to three miles from old city boundary; additional lands; new works; further money; power to Suburbs Commissioners, local bodies, or ratepayers within extended limits to contract with company and levy rates; amendment of Acts.

HAWORTH LOCAL BOARD OF HEALTH.—Powers to supply gas to township of Haworth and parts of township of Bingley and parish of Keighley; purchase of lands and construction of gas-works; agreements with public and local bodies; provisions as to purchase of undertaking of Haworth Gas Company; confirmation of agreement with and dissolution of that company; powers to maintain existing gas-works; to manufacture gas and residual products; provisions for protecting and cleansing river Worth and Bridge House Beck; general provisions as to laying out of new streets, erection of buildings, sewerage, drainage, preventing obstructions, and other improvements; provisions as to slaughter-houses and knackers yards; powers to dispose of superfluous lands; powers to levy rates; provisions as to application of funds; further borrowing powers; amendment or repeal of Acts; and other purposes.

HEREFORD IMPROVEMENT.—Amendment and consolidation of Acts; incorporation of Acts; uniting city of Hereford, suburbs, and liberties thereof into one district; extension and improvement of sewerage system; abolition of separate drainage districts and special sewer-rates; sewer-rate; utilization of sewage; slaughter-houses; markets; water supply; street improvements; bye-laws; borough-fund; making, collecting, and levying of rates; borrowing powers; purchase of lands, and other hereditaments; tolls; and other purposes.

HINDLEY GAS.—Reincorporation of the Hindley Gas, Coke, and Meter and Fittings Company, with power to purchase lands, maintain and extend works, manufacture gas, and light Hindley Abram and other places with gas.

HINDLEY LOCAL BOARD.—Power to erect and purchase gas-works, and to manufacture gas; to construct water-works and supply gas and water; purchase of lands, levying of rates, borrowing of money; repeal, incorporation, and amendment of Acts; and other purposes.

HINDLEY LOCAL BOARD—Power to purchase the undertaking of the Hindley Gas, Coke, Meter, and Fittings Company, Limited, and to dissolve the company; to erect gas-works, and to manufacture gas; to construct water-works, and supply gas and water; purchase of lands; levying of rates; borrowing of money; repeal, incorporation, and amendment of Acts; and other purposes.

ILFRACOMBE GAS.—Dissolution of Ilfracombe Gas and Coal Company; incorporation of new company; power to enlarge existing gas-works; to take land by compulsion or agreement; to raise capital; and other purposes.

KEIGHLEY WATER-WORKS.—Extension of present, and construction of additional water-works; compulsory taking of lands and streams; provision for compensation; power to regulate the laying out of streets and the erection and alteration of buildings; application of funds and rates to purposes authorized by bill, and to authorize the raising of additional funds; provisions for the liquidation of moneys borrowed and to be borrowed; incorporation of general Acts; repeal, alteration, extension, and amendment of Acts; extension of time for doing certain acts.

KINGSTON-UPON-HULL WATER-WORKS AND COURT OF RECORD.—Power to corporation of Kingston-upon-Hull to maintain and extend water-works at Springhead, and construct new works in connexion therewith; to deviate from lines and levels of works; to acquire compulsorily, or otherwise, rights of way over certain roads, &c.; compulsory purchase of lands; rates; power to make bye-laws; confirmation and enlargement of borrowing powers; powers to abandon and sell works at Stoneferry; limits of supply; power to contract with local boards, &c., of adjoining places; regulations as to meters, &c.; amendment of Act; improvement of constitution and extension of powers of Court of Record; and other purposes.

LYMM LOCAL BOARD GAS.—Power to manufacture and supply gas, and to purchase gas-works; purchase of lands; levying of rates; borrowing of money; repeal, incorporation, and amendment of Acts; and other purposes.

MANCHESTER CORPORATION WATER-WORKS AND IMPROVEMENT.—Power to make new street and bridge over Irwell, and to acquire additional lands for improvement, cemetery, and other purposes; agreements with corporation of Salford; extension of time for exercise of compulsory powers of taking lands; further powers as to bye-laws with respect to water-works, building, sanitary, and other purposes; power to create consolidated stock and to raise further moneys; superannuation fund for fire brigade; amendment of Acts.

NEWPORT AND PILLGWENLLY WATER-WORKS.—Construction of additional reservoirs in works in parishes of Bassalleg, Henllis, and St. Woollos, and borough of Newport, Monmouthshire; compulsory purchase of lands, streams, &c.; further money powers; subscription by commissioners of port or harbour of Newport; amendment of Acts.

NEWTOWN WATER.—Incorporation of company for supplying Newtown (Mont-

gomeryshire) and neighbourhood with water; construction of water-works; purchase of land; contracts with public bodies; recovery of rates, &c.

North Cheshire Gas.—Incorporation of company with power to purchase lands, construct, gas-works manufacture gas, and to light and supply with gas the townships of Altrincham, Bowdon, Dunham, Massey, Timperley, Baguley, Hale, Ashley, and so much of the township of Ashton-upon-Mersey as is situate in the parish of Bowdon; powers to purchase works and plant of the Altrincham Gas Company, and the site thereof; powers to raise capital, and levy rates: and other purposes.

Potter's Bar Gas and Coke.—Dissolution and reincorporation of Potter's Bar Gas and Coke Company, Limited; regulation and increase of capital; supply of gas within the parishes of South Mimms, Enfield, and Monken Hadley, in the county of Middlesex, and Northaw, North Mimms, Chipping Barnet, Ridge, and Shenly, in the county of Hertford; erection of additional gas-works; power to levy rates, &c.; agreements with local boards and other public bodies; purchase of undertakings of, and amalgamation with the Barnet Consumers Gas Company, Limited, and East Barnet Gas and Water Company; dissolution of those companies; amendment of Act.

Rochdale Borough Extension and Improvement.—Change of corporate title; amendment of charter and Acts; extension of municipal limits to parliamentary boundary; arrangement as to property and liabilities of existing corporation; new streets and improvement of streets, and acquisition of lands in connexion therewith; sewerage works, and acquisition of lands in connexion therewith; additional lands for gas purposes and for cemetery; purchase of fairs and of undertaking of market company and additional lands for markets and fairs; regulations of markets and fairs; extension of water-works and acquisition of lands in connexion therewith; extension of time for compulsory purchase of lands and completion of water-works; conservancy powers over the River Roch and its tributaries; compulsory power over lands; general improvement powers; rating and borrowing powers; incorporation of Acts.

Sheffield Corporation (Payment of Costs).—Legalizing and providing for payment out of the rates, &c., of costs and expenses incurred by or on behalf of the Corporation of Sheffield in 1869 and 1870 in opposing the water-works company's proposed rules and regulations before the local magistrates, and in reference to parliamentary proceedings suspending and discharging all actions, suits, and legal and equitable proceedings taken with reference to such costs and expenses, and providing for payment of costs incurred by the corporation therein, indemnifying the members and officers of the corporation, and confirming the rates made and acts done by the corporation for payment of all or any of such costs and expenses; amendment of Municipal Corporations Act and other Acts.

Sheffield Corporation Water.—Transfer of Sheffield Water-Works Company's undertaking to corporation; winding up and dissolution of company; powers to corporation to levy rates, &c., raise more money, and other powers with respect to purchase of undertaking and supplying water within the company's limits; amendment of Acts.

South London Gas.—Amalgamation of the South Metropolitan Gaslight and Coke Company and the Surrey Consumers Gaslight and Coke Association with the Phœnix Gaslight and Coke Company; increase, alteration, and regulation of capital, preference shares, and stock; sale and lease of superfluous lands; supply of gas in bulk; and special agreements with other companies, bodies, and persons; alteration of title of Phœnix Gaslight and Coke Company; repeal or amendment of Acts; and for other purposes.

Southwark and Vauxhall Water.—Increase of capital; amendment of Acts.

Tamworth Gas.—Repeal of Deed of Constitution of the Tamworth Gaslight and Coke Company, and reincorporation of that company; regulation of undertaking; capital and borrowing powers; further capital; vesting in new company the undertaking and powers of the existing company; power to acquire and hold lands and maintain, improve, and construct gas-works: construction of new railway or tramway; supply of gas to Tamworth and surrounding district; manufacture and sale of gas and things arising therefrom; agreements with district boards and others; powers to take rents and charges for supply of gas; to sell or lease lands or works not required for purposes of undertaking; amendment of Acts.

The Gaslight and Coke.—Repeal or alteration of section 59 of The Gaslight and Coke Company's Act, 1868, and of similar provisions in the schemes for the amalgamation of the City of London Gaslight and Coke Company and the Great Central Gas Consumers Company with The Gaslight and Coke Company; additional capital; and other purposes.

Trowbridge and Westbury Water Supply.—Reincorporation of Trowbridge and District New Water Company, Limited; powers to maintain works and construct new works, and to supply Trowbridge, Westbury, and adjoining places in Wiltshire; new source of supply; further money powers; arrangements with local bodies; further provisions as to Trowbridge Water Company, Limited; and the vesting of their property in the new company.

Tonbridge Gas.—Dissolution and reconstruction of Tonbridge Gas Company; cancellation of Deed of co-Partnership; power to acquire and hold lands, and maintain, improve, and enlarge existing works; money powers; agreements with district boards and others; power to supply gas; and other purposes.

Wakefield Water-Works.—New reservoir and works at Field Head and Park Hill; increase of capital; amendment of Acts.

Wandsworth Gas.—Incorporation of company with powers for manufacturing gas and supplying the same within the parish of Wandsworth, in the county of Surrey; power to purchase lands by agreement; power to purchase undertaking and works belonging to Mr. John Dormay; to levy rates; arrangements as to capital, &c; incorporation of Acts; and for other purposes, &c.

Warwick Local Board Water-Works.—Powers to the Local Board of Health for the district of the borough of Warwick for improved supply of water, acquisition of lands and streams; construction of water-works; limits of supply; power to stop up or divert paths and roads; power to borrow; repeal and amendment of Acts; and other purposes.

West Worthing Improvement.—Alteration of provisions respecting churches and election of commissioners; purchase of water-works, baths, and assembly-rooms; power to borrow money, and make and charge rates; amendment of Act.

Wilmslow and Alderley Edge Gaslight.—Incorporation of company with powers for manufacturing and supplying gas within the parishes of Wilmslow and Alderley, and the townships of Chelford, Birtles, Mottram St. Andrew, Newton, Woodford, and Handforth-cum-Bosden, in the county of Chester; capital; borrowing; rates; contracts; repeal and amendment of Acts; and other purposes.

## APPLICATIONS TO THE BOARD OF TRADE UNDER THE GAS AND WATER FACILITIES ACT.

Blaenavon Gas and Water.—Application to Board of Trade for power to maintain and continue gas and water-works, and to manufacture and supply gas, and to supply water within the town and district of Blaenavon, in the county of Monmouth; to construct additional water-works; to raise additional capital; make agreements with public bodies and others; levy rates, &c.

Borough of Portsmouth Water-Works.—Application for a Provisional Order for power to continue, construct, and maintain water-works, and supply water in the parishes of Wymering, Widley, Farlington, Bedhampton, Havant, and Warblington; limits of district; power to break up streets; levy rates; variation of the above company's Acts of Parliament; incorporation of Acts; and other purposes.

Bridge of Allan Water.—Increase of capital; amendment of Act.

Bungay Gas.—Application for Provisional Order for powers to maintain and enlarge gas-works; limits of district; power to manufacture gas; break-up streets; levy rates; and other purposes.

Cleator Moor Gas.—Application for Provisional Order to enable the Cleator Moor Gas Company to purchase or lease lands, and erect and maintain gas-works thereon; to manufacture and store gas and residual products; to lay down mains and pipes, and break up streets, &c.; to levy rates, rents, and charges for supply of gas; to make contracts, &c.; incorporation of Acts; and other purposes.

East Ardsley Gaslight.—Application for Provisional Order for powers to acquire land and construct gas-works; to manufacture and supply gas and residual products; to raise capital; to lay down mains and pipes, and break up streets, and levy rates and charges; and for other purposes.

Elstree and Borehham Wood Gas-Works.—Application for powers for manufacturing and supplying gas within the parish of Elstree and surrounding districts; power to maintain and improve existing gas-works; agreements with public bodies and others.

Gosport Water.—Application for a Provisional Order by the Gosport Water-Works Company for powers to raise additional capital; amendment of Act; and other purposes.

Holywell Water-Works.—Construction of works, supply of water to Holywell town and district.

Kettering Water-Works.—Powers to construct and maintain water-works for supplying water to the town and inhabitants of Kettering, and for other purposes.

Littlehampton Gas.—Application for power to maintain and continue gas-works, and to manufacture and supply gas to the town of Littlehampton and its vicinity, in the county of Sussex.

Margate Water-Works.—Application for a Provisional Order, by the Margate and Broadstairs Water-Works Company, for powers to extend their limits of supply to Birchington and intervening parishes, and to construct works, and to raise additional capital; and for other purposes.

Portsea Island Gaslight.—Application to the Board of Trade for a Provisional Order; for power to raise additional capital; to purchase or take on lease additional lands by agreement; and for other purposes.

Ruthin Gas.—Application for a Provisional Order for powers to maintain, continue, and renew gas-works, and to manufacture, sell, and supply gas and gas products in the town, borough, and parish of Ruthin, and in those parts of the parishes of Llanfwrog, Llanynys, Llanrhydd, and Llanfair Dyffryn Clwyd which lie within the said borough, all being in the county of Denbigh; and for other powers.

Swinton and Mexbrough Gaslight.—Application for a Provisional Order to enable the Swinton and Mexbrough Gaslight Company to acquire land; to continue and maintain existing works; to erect new works; to manufacture and store gas and residual products; to lay down mains and pipes, and break up streets; and to supply gas-meters, fittings, and gas apparatus; and levy rates and charges therefor; confirmation of existing and powers to make new contracts; incorporation of Acts; increase of capital.

Wakefield Water-Works.—Increase of share and loan capital.

Wallasey Improvement.—New works in connexion with Seacombe and Egremont ferries, and powers to Mersey Docks and Harbour Board; extension of water-works; provisions in reference to limits of Seacombe ferry; extension and enlargement of powers of local board; provisions as to borrowing and application of funds and levying of rates; amendment of Acts.

Wellington (Salop) Gas.—Application Board of Trade for a Provisional Order for power to maintain and continue gas-works; to extend limits of supply; power to break up streets and levy rents; to raise additional capital; and for other purposes.

Wells Water Supply.—Power to construct and maintain water-works and works connected therewith, and to supply water to the city of Wells, and places in the out-parish of St. Cuthbert in Wells, adjacent thereto, in the county of Somerset, and to acquire lands and easements over or through the same by agreement for the purposes of the company, and to demand and take rates and charges in respect of the water supplied.

Ystrad Gas and Water.—Application to Board of Trade for power to define limits of gas and water supply; to extend limits of gas supply; to construct new gas-works; to purchase land; to raise additional capital, &c.

# Miscellaneous News.

## SOUTH METROPOLITAN GASLIGHT AND COKE COMPANY.

An Extraordinary Meeting of the Proprietors of this Company was held at the London Tavern, on Monday, Nov. 27, to elect a secretary in the place of the late Mr. Thomas Livesey. The chair was occupied by Thomas Bridge Simpson, Esq.

Mr. G. Livesey (secretary *pro tem.*) read the notice convening the meeting, and also the following report:—

The directors feel assured that the proprietors will have received with deep regret the melancholy intelligence of the sudden and premature decease of their late able and lamented secretary, Mr. Thomas Livesey, on the 10th ult., so immediately after their handsome recognition of his services in the resolution passed at the general meeting on the 2nd ult.

The directors have recorded in their minutes a sincere expression of their high estimation of his character and services during the long period of 32 years, and their deep sense of the loss the company has sustained. A vacancy is thus created in the office of secretary, which it is the province of the proprietors to fill up at their discretion; but to mark the sense the directors entertain of the valuable services rendered by the late secretary, and their favourable opinion of his son, they think it right to recommend the appointment of Mr. George Livesey as his successor. The proprietors are aware that Mr. George Livesey has for some years held the office of engineer to the company, in the duties of which he has been trained, and which he now performs to the satisfaction of the directors, while he has, at the same time, had some experience in the duties of secretary, from having acted as such during the temporary absence of his father. The directors think it will be to the advantage of the company that he should continue to hold the office of engineer, and if the proprietors should think fit, to appoint him to the office of secretary also for a season, the directors will on their part be prepared to allow him such assistance in the department of accountant and secretary as they may deem necessary.

The directors think it right to add that they recommend that this arrangement, if adopted, should be considered as merely provisional, as they cannot, without longer experience of its working, contemplate the permanent union of two offices so onerous and important, but, while the question of amalgamation is still pending, they think such a temporary arrangement will best meet the circumstances of the case. If the proprietors should concur in this view, the directors will be prepared to recommend the amount of remuneration which they think would be sufficient to include the services to be rendered in the character of secretary in addition to those of engineer.

The Chairman: Gentlemen, I am quite sure that the language employed in the report just read, in reference to our late secretary, Mr. Livesey, entirely represents the feelings of the shareholders of this company. Mr. Livesey for many years occupied a most important position in this undertaking. He was a man of great ability, and we shall find it very difficult indeed to obtain any one who can fully take the place which has become vacant by his death. I acted with him for upwards of 30 years, and therefore knew something of his worth. During the whole of that time we never had but one disagreement with him, and that was upon a point in which he wisely gave way when he knew

that we considered it of importance to the company. You may suppose what a loss his death has been to us, having acted together so long, when I say that he always carried out the views of the directors in the most prompt and careful manner, and never needed to seek for second instructions from them in doing so. For myself, I assure you that I speak of him with almost brotherly affection, and I miss him every time I have to do with the affairs of the company. He was a man who was very modest and unobtrusive in his behaviour, and I believe he was beloved and esteemed by every one who knew him. In the remarks I have made I know that I speak the sentiments of my colleagues at the board, and I feel sure that every one present cherishes the same sentiments towards Mr. Livesey that we do. I have only now to ask you to agree with the directors in their report, and that it be adopted and entered on the minutes.

The motion was put, and carried unanimously.

Mr. GRAY: What salary did the late Mr. Livesey receive?

The CHAIRMAN: £1200 a year up to June last, and £1600 a year to the time of his death.

Mr. GRAY: In every word which has been addressed to us by our worthy chairman, and in the report presented by the directors, I most cordially concur. I had many opportunities of making myself acquainted with the late Mr. Livesey, and I have no hesitation in saying that a more excellent, able, and deserving man never lived. I believe most thoroughly that this company may attribute very much of its present prosperity to his unwearied industry. No man occupied a position of greater importance to the shareholders than he did, and I am sure no one could better have discharged its onerous duties. I deeply regret that we have been deprived of his services. The last time we met here he was suffering from severe indisposition, but I did hope that God would spare his life to us and to his family. He has gone, however, from us, and while we lament his death I am sure there is no difference of opinion amongst us as to his merits. If I were to occupy an hour of your time I could not say more than I have done to evince my own feelings on this occasion, and I have only to express my sorrow that he did not live long to enjoy the increase which was made to his remuneration at our last meeting. I shall conclude by moving—"That the salary of the late Mr. Livesey be paid up to Christmas next."

The CHAIRMAN: The official auditor places a limit on the amount we may pay in cases like this.

Mr. GRAY: In that case it is useless to say more on the subject. It is proposed by the report to place the son of our lamented friend in his position as secretary of the company, and I think a more judicious appointment could not be made. The only question which strikes me is that as Mr. George Livesey already occupies an office in the company, whether the remuneration of £1000 is not too much. I should have thought £800 a year quite sufficient for the present.

The CHAIRMAN: I may just state that some time ago, finding that other companies were advancing the salaries of their engineers, we increased the salary of Mr. G. Livesey to £900. The proposed salary for the two offices is therefore only £100 a year additional.

Mr. GRAY: I was not aware of that fact, and therefore I can only say that I entirely approve of the arrangement. I move—"That Mr. George Livesey be appointed secretary, at the salary of £1000 per annum, to include the remuneration for his services in that capacity and also as engineer (which office he already holds by the appointment of the directors), but that the appointment as secretary is on the understanding that it will be liable to be rescinded in the event of the continued union of the two offices being hereafter considered undesirable."

Mr. PAULL seconded the resolution.

Mr. BLACK: I do not see why we should not pay the salary of the late Mr. Livesey up to Christmas, 1872.

The CHAIRMAN: The answer to it is that the auditor would not pass the accounts with that amount charged in them.

Mr. FOSTER: Mr. Livesey was no ordinary man. When this company was in difficulties, and we received little or no dividend, he by his exertions and patient labour helped to extricate us, and we owe to him, as it has been said, much of our present prosperity. I think, therefore, his services are entitled to all the recognition we can give them.

Mr. GRAY: No reward we could possibly offer would adequately express our sense of the services rendered by the late Mr. Livesey to the company, but when we are told that the official auditor of the accounts of all the gas companies would not sanction the payment kindly proposed by the honourable proprietor, it is no use pressing it.

Mr. H. JENKINS: I understand Mr. G. Livesey's present salary is £900 for the duties connected with his office as engineer of the company. It is now proposed to make him the secretary until some future arrangements are come to, with an addition of only £100 a year to his salary. I do not think that would be a sufficient remuneration for the increased duties he will have to discharge.

The CHAIRMAN: But the directors intend to employ other aid in the office.

Mr. H. JENKINS: Still the responsibilities connected with the secretaryship will rest on Mr. Livesey, and I shall therefore propose that the remuneration be £1200 a year.

Mr. BLACK seconded the amendment.

Mr. PAULL: I think we had better trust the matter to the judgment of the directors, who consider the salary proposed sufficient, with the aid they intend to give Mr. Livesey. Before I sit down, I desire to testify to the truth of all that has been stated by the chairman and Mr. Gray with reference to our late secretary. As I was one of the auditors of the company for six years, I was periodically in contact with Mr. T. Livesey, and I found him a most able man in every way. He was well up in accounts, thoroughly versed in all the affairs of the company, and prepared at all times to give the directors and the auditors every assistance in his power. In fact, a more able, efficient, and conscientious man I never had the pleasure to deal with, and I have the utmost satisfaction in bearing my testimony to his worth.

Mr. PRIDDEN: In supporting Mr. Gray's motion, the acceptance of which I think would be more complimentary on our parts, as according with the recommendation of the board, and knowing, as we do, that we can at any time alter the amount of the secretary's remuneration if desired, I would just say one word with reference to the late Mr. T. Livesey. As ex-secretary of the Phœnix Gas Company, I worked with Mr. Livesey for 28 years, and I can bear my testimony that a man of greater probity and ability I never knew. In our relative positions, we sometimes, of course, clashed, but he was always bound up with your interests, and nothing could shake him from his purpose when those interests were concerned. I feel that the loss this company has sustained by his death is very great, because I know that, acting with the directors, his able management was, to a great degree, the spring of the prosperity we now enjoy.

The CHAIRMAN: The arrangement for combining the two offices is, as stated in the report, only a provisional one, although, perhaps, of course, it may become permanent. But we are in hopes that, if the time should come for a division of the duties, we shall be able to continue to Mr. Livesey the salary we recommend you now to vote him as engineer of the company only.

Mr. H. JENKINS: If it is only a temporary arrangement, I think there is the greater reason for making the salary £1200, and Mr. Livesey will understand that when the duties are divided, it will be competent to the company to reduce the amount to £900 or £1000, as may be thought desirable. I do not consider it becoming in such a company as this to add the duties of secretary to those of engineer, with an addition of a paltry £100 a year to the salary.

Mr. GRAY: I entirely concur in much that the honourable proprietor has stated, but I cannot agree with him when he speaks about a paltry remuneration. The duties of the secretary are, no doubt, very important, but that officer acts under the supervision of the directors, and no more responsibility attaches to him than to any other person connected with the staff of the company. The directors are more competent to decide what should be the amount of salary than the proprietors, and I think we may safely leave the matter in their hands, for they have never shown any parsimony with regard to the officers of the company.

The amendment having been put and negatived, the original motion was carried unanimously.

Mr. G. LIVESEY: Sir and gentlemen, the first thought which comes to my mind in rising to acknowledge the vote you have just adopted, has reference to my poor father. The last time you were in this room he made those prophetic remarks, "I am almost worn out; whether I shall live long to enjoy your kindness I know not." In eight days from that time I lost one of the kindest fathers that any one could have. Though he was ailing at our last meeting, none of us expected so sudden a termination of his earthly career, and his death was a great shock to me, as I know it was to our chairman and every one of his friends. With regard to the vote you have just passed, my first duty is to thank you, which I do most sincerely for the confidence you have reposed in me in electing me to the high and responsible position of secretary, in conjunction with the office I have hitherto held as engineer of the company. That I have some knowledge of engineering I may venture to affirm, because for several years past my father, finding the duties of the secretary's office as much as he could attend to, confided the entire management of the working operations of the concern to my hands. It may be a little satisfaction to some honourable proprietors to know that in appointing me to succeed my father in the post which he occupied till his death, you are not changing your manager, and I trust I shall be able to conduct the affairs still to your satisfaction. My interests and motives are all bound up in the prosperity of the undertaking. I have been officially connected with the company for the last 22 years, and I have always been proud of it, and everything connected with it. I have a further interest as a shareholder. Two-thirds of my father's property is in the concern, and a great portion of my own past and prospective savings are invested in it; so that in taking this position of responsibility I am acting for myself as well as for you. If I needed any further motive, it is supplied by the confidence and kindness you have shown towards me. In giving me the charge of this important company, you confer a great honour upon me, and I hope that I shall be able, by the ability God gives me, to fulfil my duties to your entire satisfaction. I am sorry there should have been any appearance of disagreement in respect to my salary, and while expressing my obligations to those gentlemen who proposed that I should have £1200 a year, I may say that I am satisfied with £1000. At 38 years of age it is a very handsome salary, and the only ground upon which anything could be said respecting it is when it is compared with the salaries of other men in corresponding positions. But as I said I am quite satisfied with the arrangement made, and content to leave the matter in the hands of the directors, feeling that they will treat me as they have always done with the greatest consideration and kindness. Again thanking the shareholders most sincerely for the confidence reposed in me, I beg to assure you that as far as lies in my power the interests of the company shall not suffer in my hands.

The CHAIRMAN: There is just one word I may say in passing. We have been much put out of our way—first of all by the illness of our late secretary; and secondly, and still more seriously, by his lamented death. Therefore, with reference to the question of amalgamation, I may say that we have been unable to come to any definite arrangement with the Phœnix Gas Company so as to be in a position to lay the matter before you as yet. We have had a long conference on the subject to-day, which made us a little late in arriving at this meeting. We propose to call you together within the next two or three weeks to a private meeting, in order to consult your views on this question of amalgamation, before asking you to meet in a more public manner to give us power to go on with the bill. Our earnest desire is to obtain from our shareholders the expression of their views on the question to be laid before them, and we believe that as it will be presented to them it will be to their interest to accept it. At the same time we are entirely in your hands, and shall unreservedly take your opinion when the time comes. I need say nothing more at present, and I have only therefore to thank you for your attendance to-day, and express a hope that our private meeting may be larger than this, because we wish to come entirely at your views on the question generally.

Mr. GRAY: We shall not do justice to our worthy friends, the directors, if we separate without expressing by our vote the sense of satisfaction we have in the way in which they conduct our affairs. In proposing a vote of thanks to them, I would take the opportunity to say that the question of amalgamation is one of the deepest interest to this company, and must be well considered before any step is taken. We must not lose sight of the fact that we are in a proud position, and that we can supply gas at a less price than any other company in London, so that it is for the interest of other companies to amalgamate with us. It is a question for our consideration in what way this can be carried out. We must take good care not to compromise our interests, and I am quite sure the directors have no desire to do so. When they convene us together we shall have the opportunity of knowing what is proposed to be done, till then we must let matters remain as they are. I conclude by proposing a vote of thanks to the directors.

Mr. BLACK seconded the motion, which was adopted unanimously.

The CHAIRMAN said it would probably interest the shareholders to hear the resolution which the board recorded on their minutes, on receiving intelligence of the death of Mr. Thomas Livesey.

The SECRETARY accordingly read the following:—"Resolved unanimously—That this board desires to record its deep sense of the loss this company has sustained in the sudden death of its late able and lamented secretary, Mr. Thomas Livesey, after a service of 32 years, and deems it right, alike as an act of justice to his memory, and as an incentive to its other officers, to express its high estimation of the energy, efficiency, and zeal, tempered with sound judgment, caution, and forethought, with which he has performed the duties of secretary and accountant, and (during the greater portion of the time) as engineer also. To his just and considerate treatment of the working men under his charge may, in great measure, be attributed the uninterrupted harmony which has prevailed between employers and employed, while by his amiable and unassuming demeanour he has gained general esteem, and by his undoubted abilities has largely promoted the interests of, and reflected credit on the company he served so well—that to mark the sense this board entertains of his services, and the high opinion it holds of the merits and qualifications of his son, it will be prepared to recommend to the proprietors the appointment of Mr. George Livesey to the vacant office of secretary."

Mr. GRAY: I think we should, as proprietors, express our concurrence in the resolution of the board, and request that this concurrence be officially intimated to Mrs. Livesey and the family.

The proposition was cordially approved.

The CHAIRMAN acknowledged the vote of thanks to the board, and the proceedings then terminated.

## ORIENTAL GAS COMPANY, LIMITED.

The Ordinary General Meeting of the Shareholders of this Company was held at the City Terminus Hotel, London, on Thursday, Nov. 30.—WALTER THOMAS FAWCETT, Esq., in the chair.

The SECRETARY (Mr. Hersee) read the advertisement convening the meeting, and the following report and statement of accounts were presented:—

In submitting the accounts for the twelve months ending the 30th of June last, the directors have to report that, owing to exceptional circumstances, the operations of the company have not resulted so favourably as in the preceding year.

The revenue has suffered materially from the continued depression of trade, the rates of exchange have been adverse, and the expenditure has been increased by the imposition of a heavy licence-tax.

The item, however, which has most seriously affected the company's profits is the excessive leakage occasioned by the execution of drainage and water works by the municipality. The shareholders were informed in the last report that considerable injury had already been done to the company's mains through the above operations, and that a heavy loss of gas had in consequence been experienced; and the directors are sorry to state that similar injury and loss have been sustained during the past financial year. Compensation was claimed from the authorities, and it was anticipated, from the friendly disposition they have hitherto evinced towards the company, that they would be prepared to deal with the matter in a fair and equitable spirit, and make an adequate allowance for the injury inflicted by their operations; but, to the great regret of your directors, they attempted to repudiate their liability, and, moreover, declined a reference of the question to arbitration. Under such circumstances a recourse to legal proceedings became unavoidable, and your directors have accordingly taken the steps pointed out by counsel for obtaining compensation.

Private lighting has made further progress during the year, 71 new consumers having been obtained, and 1741 new burners added. Instructions have also been received from the port commissioners for the erection of 21 lamps on the jetty, and it is probable this number will be increased at an early date. The total numbers of lights on the 30th of June last (including Howrah) were—public 3362, private 27,283, compared with, respectively, 3161 and 25,011 on June 30, 1870. The increase in the number of bazaar lights fixed has been satisfactory, and the expectation of the directors that the consumption of gas in the bazaars will be considerable seems now about to be realized.

The works at Howrah were completed at the end of February last, and have proved highly efficient. The progress is encouraging, and the advantages of gas are likely to be fully appreciated. The East India Railway Terminus has been lighted, and negotiations are pending for the introduction of gas to other large buildings; an early increase in the number of street-lamps is also anticipated.

The construction of a floating bridge across the River Hooghly, connecting Calcutta with Howrah, has been decided on by the Government, and will be shortly commenced; the completion of this work is expected to give a considerable impetus to the prosperity of Howrah.

No change in the constitution of the resident committee has occurred during the year, and the directors have pleasure in testifying to the hearty co-operation they have at all times received from the committee in furthering the objects of the company.

The exertions of the engineer and manager, Mr. Blackburn, in the midst of difficult and trying circumstances, merit favourable mention by the directors.

The general revenue account shows a balance of £11,471 8s., out of which the directors recommend a dividend of £5 per cent., free of income-tax, payable on the 4th proximo, making, with the interim distribution of 4 per cent. on the 3rd of June last, a total dividend of 9 per cent. for the year.

The retiring directors are John Allan and William White, Esqs., and the retiring auditors are Henry M'Lauchlan Backler and John Robinson Peill, Esqs., all of whom are eligible for re-election, and offer themselves accordingly.

*Dr.* *Balance-Sheet, June 30, 1871.* *Cr.*

| | | | | | | |
|---|---|---|---|---|---|---|
| To 30,000 shares, of £5 each | £150,000 | 0 | 0 | By amount of plant on June 30, 1870 | £240,337 | 9 | 6 |
| 29,965 ditto, ditto (50s. paid) | 74,962 | 10 | 0 | Outlay during the past twelve months | 10,717 | 6 | 11 |
| 10 ditto, ditto (30s. paid) | 15 | 0 | 0 | | £251,054 | 16 | 5 |
| 5 ditto, ditto (20s. paid) | 5 | 0 | 0 | | | | |
| | £224,982 | 10 | 0 | Cost of plant to June 30, 1871 | 251,054 | 16 | 5 |
| Loans on debentures | 52,150 | 0 | 0 | Services laid and meters in use | 4,271 | 9 | 8 |
| Unclaimed dividends | 541 | 0 | 7 | Amount due to the company | 8,890 | 13 | 6 |
| Reserve-fund | 6,854 | 12 | 2 | Value of stocks, viz.— | | | |
| Amount due by the company | 7,301 | 1 | 4 | Coals | £6,868 | 5 | 1 |
| Balance from general revenue account | 11,471 | 8 | 0 | Purifying material | 76 | 7 | 7 |
| | | | | Products | 3,971 | 10 | 10 |
| | | | | Fittings and meters | 8,713 | 0 | 9 |
| | | | | Pipes | 5,776 | 3 | 2 |
| | | | | Horses, conveyances, &c. | 472 | 10 | 0 |
| | | | | Sundry stores | 6,522 | 6 | 3 |
| | | | | Office furniture, &c. | 372 | 5 | 6 |
| | | | | | 32,772 | 9 | 2 |
| | | | | Balance in London | 3,086 | 2 | 4 |
| | | | | Bills receivable | 3,225 | 1 | 0 |
| | | | | | 6,311 | 3 | 4 |
| | £303,300 | 12 | 1 | | £303,300 | 12 | 1 |

*Dr.* *Profit and Loss, or Working Account, for the Twelve Months ending June 30, 1871.* *Cr.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| To Manufacture and distribution— | | | | By Gas-rental | £39,504 | 15 | 8 |
| Coals used, purification, wages of inspectors, sircars, stokers, lamplighters, mechanics, coolies, &c. | £19,263 | 19 | 9 | Coke, tar, fittings, &c. | 9,480 | 18 | 11 |
| Salaries in India and London | 2,381 | 3 | 7 | | £48,985 | 14 | 7 |
| Directors and auditors | 913 | 0 | 0 | Transfer fees | 14 | 17 | 6 |
| Passage and general expenses | 975 | 12 | 9 | | | | |
| Loss on exchange | 754 | 15 | 5 | | | | |
| Licence-tax | 646 | 9 | 6 | | | | |
| Reserve-fund | 326 | 8 | 2 | | | | |
| Wear and tear and repairs | 1,671 | 7 | 1 | | | | |
| Bad debts and allowances | 109 | 12 | 1 | | | | |
| | £27,042 | 8 | 4 | | | | |
| Balance | 21,958 | 3 | 9 | | | | |
| | £49,000 | 12 | 1 | | £49,000 | 12 | 1 |

*Dr.* *General Revenue Account, June 30, 1871.* *Cr.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| To Dividend of 6 per cent., balance of 10 per cent., for the twelve months ending June 30, 1870, declared at the general meeting, November, 1870 | £11,250 | 0 | 0 | By Balance on June 30, 1870 | £12,787 | 14 | 7 |
| Interim dividend of 4 per cent., on account of year ending June 30, 1871, paid June 3 | 8,700 | 0 | 0 | Ditto on profit and loss account | 21,958 | 3 | 9 |
| Interest on debentures | 2,978 | 6 | 8 | | | | |
| Income-tax | 346 | 3 | 8 | | | | |
| | £23,274 | 10 | 4 | | | | |
| Balance | 11,471 | 8 | 0 | | | | |
| | £34,745 | 18 | 4 | | £34,745 | 18 | 4 |

The CHAIRMAN: Gentlemen, I have a very simple duty to perform, which is to ask you to receive and adopt the report of the directors and the accounts. We have endeavoured in our report to condense matters as much as possible, but still we have endeavoured at the same time to give you all the information which lies in our power. The fact of the case is, that we meet to-day under peculiar, and, I hope—as we state in our report—exceptional circumstances. For the first time since we began to pay dividends at all we have this day to declare a dividend at a lower rate than we have hitherto done. For the last two or three years we have been able to pay you 10 per cent., on this occasion we are obliged to reduce it to 9 per cent. We believe this will be quite an exceptional reduction. It has arisen from a variety of circumstances which can easily be explained. In the first place, there has been the great depression of trade in Calcutta. As I have had occasion to mention before, gas is an article of luxury as well as necessity, and a great many people in the East have, on account of the great depression of trade, been obliged to economize considerably; and, amongst other things, they have economized the consumption of gas to an extent which has a little interfered with our revenue. It has occurred before, but not to so great a degree; and we are not alone in this, for every commercial concern in Calcutta has suffered, more or less. Many of the residents there have shut up their houses, and left the city; some even coming to England for a holiday. When you know that such has been the case, and when, further, you see that the receipts of the East Indian Railway—and, indeed, of most of the Indian lines—have fallen off, you will conclude that it is but natural we should suffer in our proportion. The chief cause, however, of our diminution of dividend arises, as stated in the report, from the drainage and water-works operations which have been carried on by the municipal authorities of Calcutta. These works have most materially interfered with our revenue, in consequence of the heavy loss of gas by leakage during their execution. We have done everything possible to have the matter placed upon a proper footing with the authorities, but they have treated us with great disdain, repudiating entirely their liability to compensate us for the damage and loss sustained. The result is that we have been obliged, most reluctantly, to resort to legal proceedings. We believe we are right, and that it is only a question of time before we obtain redress. We have taken the best legal opinion on the subject—that of Sir John Karslake, whose eminence is undoubted, and that of Mr. Bell, who has had a very long Indian experience. These gentlemen concur in affirming most distinctly the liability of the municipality. I think it necessary to say so much, but as we have reason to hope some arrangement may yet be come to, it would be advisable, unless special information is desired by the shareholders present, that we should not now enter into any great discussion of the question. It is a matter which is in the hands of the law, and as far as we know this is the very day on which it is to come before the courts in Calcutta, and possibly it might prejudice any future arrangements which may be proposed if we were to enter upon the subject, which, after all, we cannot decide here. The only thing we can assure you of is that not one penny for compensation has been taken into account by us in the statements laid before you, and therefore when it does arrive it will be all to the good. I do not, however, wish there should be any doubt upon this point, that it is to the drainage and water operations in Calcutta we are indebted for the present diminution of dividend, and I think that it is a very hard case indeed. In this country decisions have been given over and over again affirming the liability of municipalities who have interfered with the mains of gas and water companies, and we have no reason to suppose that when our cause comes before the courts the same measure of justice will be refused to us in Calcutta which other companies have obtained in this country. I cannot help saying that this company, having inaugurated gas in India, and having only received as dividend, after overcoming all the difficulties surrounding such an undertaking, that rate which in this country is fixed by Act of Parliament as the maximum for all companies, if justice is not done to us in the same ratio in India as it would be in England, we shall, indeed, have just cause of complaint, and there will be very little encouragement to others to invest money there. This is all that I have to say on the subject; the matter is to be discussed over the water, and let us hope it will be satisfactorily settled. The documents relating to it, which are in the possession of the directors, and which are too long and formal to be referred to here, may be seen by any of our shareholders who desire it, by calling at the office of the company. I have now told you the worst part of our case; but we have many reassuring things in connexion with the company, one of the chief being, that since the close of our financial year, affairs in India have much improved. The licence-tax, which had been put on, was very onerous—more than 3 per cent.—it is now reduced by two-thirds, and this will considerably help us. The trade of Calcutta has also improved very much, and our revenue has already begun to feel the advantage of it. We have made arrangements for economizing over there, which will enable us to work more satisfactorily, and with increased profit to you; therefore, although we were obliged to begin with some uncomfortable and disappointing announcements as to the past, we can assure you that, looking forward to the future, matters are very promising indeed. We hope that very soon we shall recoup our old position, whether we do or do not receive justice at the hands of those from whom we have a right to expect it. I conclude by moving—"That the report and accounts presented by the directors be received and adopted by the meeting."

Mr. L. CUBITT seconded the motion.

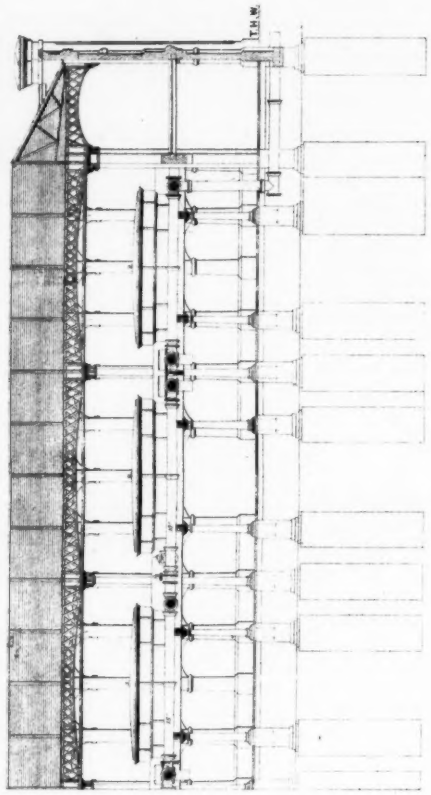
Mr. STOKES: We cannot expect always to have the bright side to look at. Our meetings hitherto, have been always cheering, and I have no doubt that the matter to which the chairman has referred will soon be cleared up, and all will again be satisfactory. I hope, when the water-pipes are laid and the

DETAILS OF PURIFYING HOUSE.

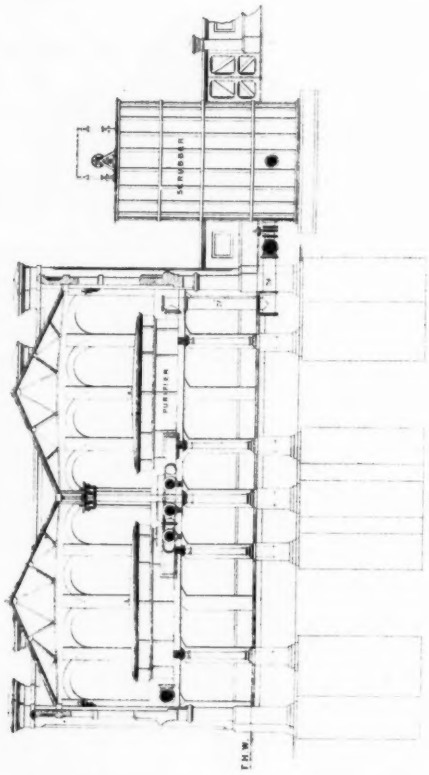
CHARTERED GAS

BECKTON W

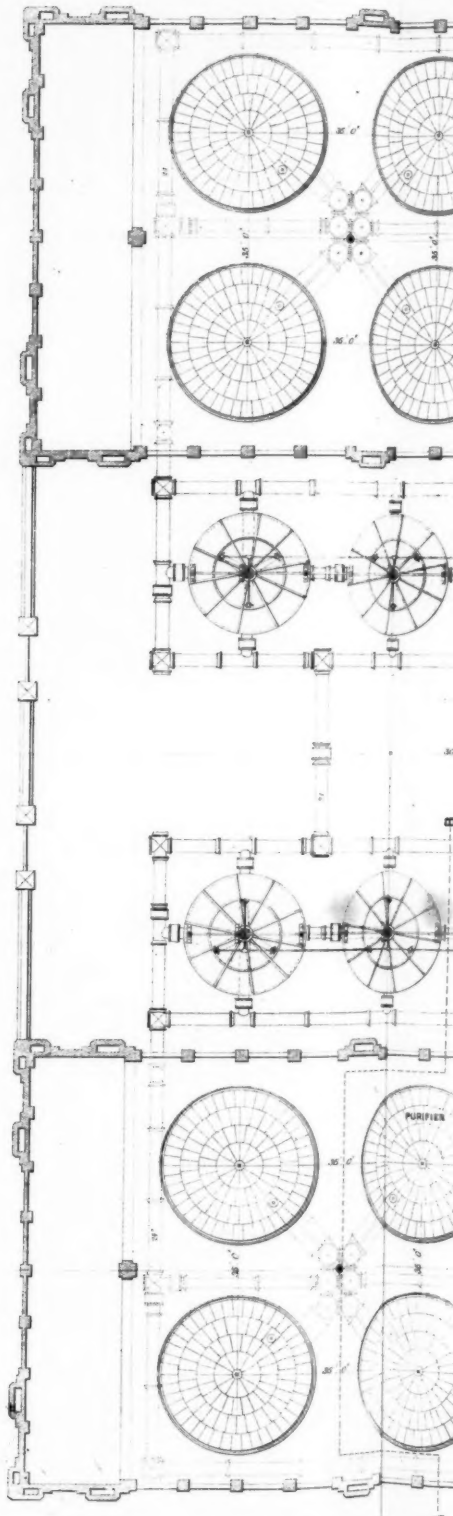
Scale of Feet



LONGITUDINAL SECTION C.D



TRANSVERSE SECTION A.B



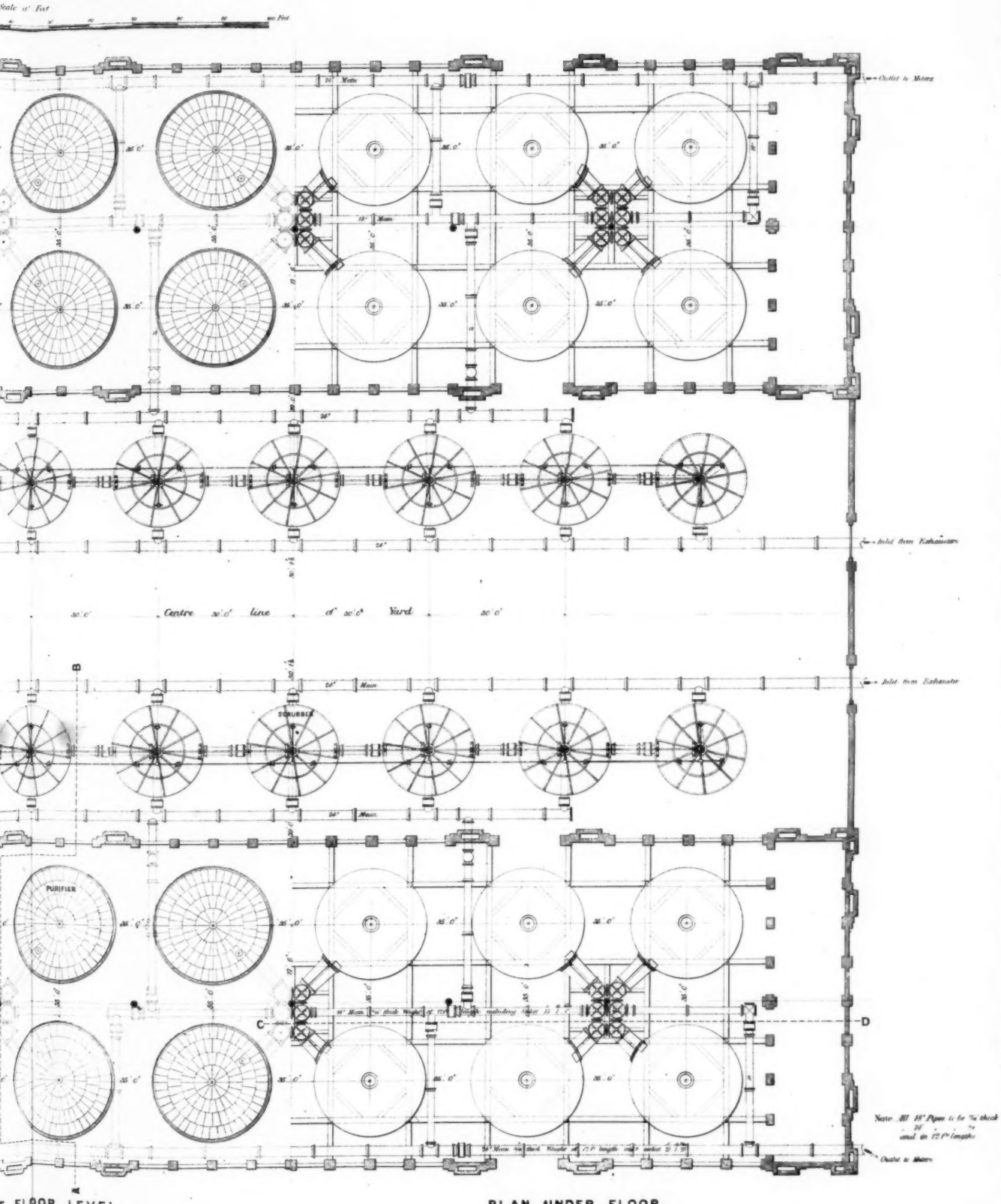
PLAN AT FLOOR LE

Photo-Lithographed by Whiteman & Bass London

# GAS COMPANY.

No 10A

## ON WORKS.




T FLOOR LEVEL

PLAN UNDER FLOOR

drainage effected, the loss we have been sustaining will cease, and as trade generally, which has been very gloomy in India as well as in England, during the last year, is now reviving, I have no doubt we shall speedily reach our 10 per cent. dividends again. I should be glad if the chairman could give us some little information respecting the supply of gas to Howrah, this being the first time we have met since the works started.

The CHAIRMAN: With regard to Howrah, matters have not gone on quite so fast as we anticipated. Since June last they have progressed, and we are very hopeful that they will continue to do so, and thus answer our best expectations. We have no doubt, indeed, about Howrah at all; it has already begun to return interest on the capital invested. With regard to the works themselves, we can speak in the most unqualified manner. They have been erected in the best possible way; our mains have been laid under the most favourable circumstances, and our leakage is reduced to a minimum. We have, in fact, everything we could desire with regard to those works, and no doubt when we meet next year we shall be able to tell you that they have answered our purpose in every possible way.

Mr. FAALCKE: You have told us of the injury we sustained in consequence of leakage. Does that still continue?

The CHAIRMAN: It has diminished, but has not entirely ceased, and it never will so long as the works which interfere with our mains are going on. But there is this fact which I ought to state—viz., that during the very rainy season, while the drainage and water-works operations were necessarily suspended, our leakage did materially decrease. We have that fact on record, as showing that we are in the right in attributing the injury sustained by us to the execution of those works. The leakage is now going on, though not to the same extent.

Mr. HADLAND: Has not the effect of these works been that some of our mains will have to be relaid?

The CHAIRMAN: No doubt in many ways it has affected us besides the loss of gas. The subsidence of the soil, after the displacement of the ground, has injured our mains very much indeed, and in that way we are put to large expense. We are obliged to have an organized staff to stop in detail all the leakages going on; and within the last two or three weeks we have despatched by the overland route a thoroughly competent man to take the head of that department of our business solely on account of these operations.

The motion was put, and carried unanimously.

The CHAIRMAN moved that the retiring directors, Messrs. Allan and White, be re-elected.

Mr. STOPFORD seconded the motion, which was put and carried.

On the motion of Mr. HADLAND, seconded by Mr. STOKES, the retiring auditors, Messrs. Peill and Backler, were re-elected.

Mr. ALLAN, in acknowledging his obligations to the meeting for re-electing him, said he felt a very strong interest in the well-being of the company, the more so from the fact that he was now the only member living of the original board of directors.

Mr. WHITE, in returning thanks, said the chairman had alluded to some of the difficulties with which the directors had had to deal. It had been a very trying year for the board, but they had striven to face their difficulties like men, and it would, he was sure, be found in the end that they had taken every proper means to maintain the rights of the company.

Mr. PEILL having returned thanks for himself and colleague,

The CHAIRMAN moved—"That a dividend of 9 per cent. be declared for the year ending June 30 last, and that the same be paid to the shareholders free of income-tax on the 4th proximo, less 4 per cent. paid on account on the 3rd of June last."

Mr. WHITE seconded the motion, which was carried unanimously.

The CHAIRMAN: I have now a very pleasing duty to perform, which is to move that the thanks of this meeting be given to the resident committee in Calcutta. As you see by the report, they are the same gentlemen who were our committee for the previous year, and when you learn that in meeting the difficulties with which they have had to contend, owing to the misunderstandings I alluded to, the depression of trade, and other circumstances, they have performed their duty to our entire satisfaction. I am sure you will be glad of the opportunity to offer them a very hearty vote of thanks.

Mr. ALLAN: I second the resolution with much pleasure, and can bear my testimony to the indefatigable zeal which the Calcutta committee have shown throughout the whole of their services to the company.

The motion was cordially adopted.

The CHAIRMAN: I think it right also to add that we have an engineer in Calcutta who has gone through all these difficulties, and that the opinion we had of him at the time we engaged his services has been fully sustained. His heart is evidently in our cause; he holds a very responsible position; and he has fulfilled his duties to our entire satisfaction. I ask you, therefore, to give him also a vote of thanks.

Mr. PEILL: As one of the auditors of the company, and a large proprietor, I of course take a deep interest in its affairs, and I beg, therefore, to add my testimony to what has been said by the chairman in reference to Mr. Blackburn. I have ample opportunity, from the correspondence which comes into my hands, to judge of the admirable way in which he carries on the business of the company. It is with great pleasure, therefore, I second the vote of thanks.

The motion was unanimously adopted.

A vote of thanks was also given to the chairman and directors.

The CHAIRMAN: Gentlemen, on the part of the directors, I assure you we do not take this vote of thanks as a mere empty compliment. Every man at our board does his duty, and to the utmost of his ability devotes himself to the interests of the company. We never have any misunderstandings amongst ourselves, and I cannot help thinking that when a board of directors work harmoniously together for years, it cannot but conduce to the welfare of the undertaking. There is an officer of the company to whose services I feel it my duty to call attention. I speak of our excellent secretary. His heart is entirely in our cause; he has made himself thoroughly acquainted with all the peculiarities of our affairs, and I present him to you as an officer of great merit, and one whose services are of vital importance to us. I am sure you will not, therefore, take it amiss, when, occupying as I do the position of chairman, I request you to join in a hearty vote of thanks to him for the efficient performance of his duties.

Mr. STOKES: I have known our secretary for some years, and I do not think we could have a better man in his place. I beg to second the resolution.

The vote was unanimously agreed to.

The SECRETARY: Mr. Chairman and gentlemen, it has been my pleasing duty to return thanks for a similar vote on former occasions, and I assure you I do it to-day with additional pleasure, because the past year has been to me, as it has been to the directors, committee, and manager a year of great anxiety. As I have received the accounts transmitted to England month after month, and seen how the leakage has progressed, I thought what would be the effect when we came here. I am glad the shareholders see the matter in the same way that the directors do, and I am grateful to them for the view they have taken of my services. The vote is all the more acceptable that it was proposed by the chairman, who certainly has the opportunity of knowing my failings as well as any merits I may possess. I think I am also justified in speaking on behalf of Mr. Blackburn. As a brother officer he will appreciate your kind recognition of him as I do. I have had letters from him privately, in which he has assured me how much it has distressed him that he could not send over better accounts. I know that he feels heartily interested in the affairs of the company, and would work night and day to maintain its position. We are both actuated by the same motive—a desire to serve you faithfully, and to do our duty to the utmost of our power.

## IMPERIAL CONTINENTAL GAS ASSOCIATION.

The Half-Yearly Ordinary Meeting of the Proprietors of this Association was held at the Terminus Hotel, Cannon Street, London, on Tuesday, Nov. 28—PHILIP TWELLS, Esq., in the chair.

The SECRETARY (Mr. Albert F. Jackson) read the advertisement convening the meeting, and the seal of the association having been affixed to the register of proprietors, the following report was presented:—

The present half-yearly ordinary meeting of the shareholders has been convened, agreeably to the company's Act of Parliament, for the purpose of receiving a report from the president and directors upon the affairs of the association, and for declaring the dividend for the half year ended the 30th of June last. The workings at the several stations, and the affairs generally of the association, have continued satisfactory, notwithstanding the various hindrances and difficulties of necessity incidental to all business pursuits in the towns of France, and many of those in Germany lighted by the association in consequence of the late Franco-German war.

The total quantity of gas made in the half year now under consideration was in round numbers 2108 millions of cubic feet. The total quantity made in the corresponding half year of 1870 was 1962 millions of cubic feet, being an increase of 146 millions of cubic feet, or at the rate of about 7½ per cent.

The total number of lights at all the stations on the 30th of June last was 875,538. The total number on the 30th of June, 1870, was 823,968. These figures show an addition of 41,570, or an increase of about 6½ per cent. Reductions in price of gas have been made, and will continue to be made gradually at Vienna and elsewhere, as circumstances may dictate or render advisable.

In the half year now under consideration the new tanks and gasholders alluded to in the last report have made further progress. At Vienna, Frankfort-on-the-Maine, Lille, and Amsterdam, very large additions have been made to our outlay for plant and purchase of land. At Berlin the construction of subsidiary works for Schöneberg, mentioned in the last report, has been proceeded with satisfactorily. All these extensions and enlargements had become indispensably requisite to meet the increased demand for gas in the various towns. They have, of course, necessitated large expenditures of money.

With regard to the other stations of the association, the president and directors have nothing of any particular moment to report. Generally, the energy, ability, and experience of the chief superintendent, and of the several engineers and other officers acting under him, are constantly employed in endeavouring to give satisfaction to the various municipal authorities and private consumers, and in forwarding the interests of the association. The rental for the half year ended June 30, 1871, was larger than that for the first half year of 1870, but the exceptional position in which most of the German establishments have been placed in consequence of the late war, the irregular and partial working of their coal mines, and the disturbance in the arrangements of the railways, particularly with regard to their rolling-stock, have produced a serious effect upon the profits of the company. The advance in the price of coal from the mines abroad, on which the association has usually relied for the entire or partial supply of some of its establishments, and the difficulty in obtaining it, even at a greatly increased price, have compelled the president and directors to transmit large quantities of coal from England. Consequently the expenditure for coal during the half year with which this report is now dealing exceeds by about £39,000 the cost of coal during the corresponding half year of 1870. The result is that, notwithstanding the outlay in extensions and enlargements of about £140,000 in the last three half years, our profits for the half year now under review fall short of those of the corresponding half year of 1870 by the sum of £38. The value of the secondary products was for the two half years now under comparison very much the same. The president and directors, in conclusion, desire to draw the attention of the shareholders to the accounts for the half year ended the 30th of June last. These have been duly audited, and from them the directors have, in accordance with the provisions of the Companies' Clauses Consolidation Act, prepared a scheme showing the profits of the association for the last half year, and the portion thereof applicable to the purposes of dividend, which the president and directors recommend now to be declared—namely, a dividend of £2 per share, payable free of income-tax, on and after the 15th day of December next.

The CHAIRMAN: Gentlemen, the report which has just been read explains to you the position in which we found ourselves on the 30th of June last. It certainly is not quite so satisfactory as we could very well have wished, but, taking all the circumstances of the half year into consideration, it shows, I think, as great an amount of prosperity as we could reasonably have expected. The report has referred to the difficulties we have had to encounter with respect to our supplies of coal at the various stations. The working of the foreign mines during the half year was very much disturbed by a variety of causes. In the first place, many of the colliers were obliged to leave their work and join the army. Their places had to be supplied by persons ignorant of that particular kind of labour, and the owners of the collieries had to do the best they could to carry on their undertakings; that, of course, had a great effect upon the price of foreign coals, and our engineers had frequently to put up with coal not so good as they desired, but still the best that could be obtained. When we get an inferior kind of coal, it not only has a bad effect upon the quality of the gas made, but we require to use more to obtain the same quantity of gas. Many of our stokers were taken away to join the army, and we had to make use of inexperienced labour, which also means additional expense. Everything, in fact, concurred to add to the price at which we could produce gas before we could distribute it to the consumers. When I speak of the price of coal, you must remember the very large quantities that we use. A rise of 1s. or 2s. a ton does not appear a very serious matter in a consumption of five or ten tons; but when you are told that we use between 230,000 and 240,000 tons in the half year, you will see at once that a rise of 2s. 2d. per ton (which was about the case last half year) makes a total additional expense of about £25,000. We have endeavoured to supply the want of our usual supply of foreign coals by shipping a greater quantity of coal from England, but as every one at all acquainted with the manufacture of gas knows, there has been, as there still is, a great difficulty in obtaining them. Our colliers, knowing the great demand for their labour, have taken advantage of the circumstance to strike for higher wages, and even the boys who drive the donkeys in the collieries have joined in the strike. The consequence has been, that the quantity of coal raised to the mouth of the pits has greatly decreased, and the owners of them have great difficulty in fulfilling the contracts into which they had entered, so that just when we should have been thankful to get an additional supply, the facilities for getting even the ordinary quantity have been much diminished. We have, as I said, done the best we could under the circumstances, and perhaps the results are as favourable as we were justified in expecting. In addition to the difficulty in obtaining coal, we have also had to make reductions in the price of gas. Our average price has not been very much less than it was in the corresponding period of 1869 and 1870, but still it is less, and when we take into consideration the enormous quantities of gas we make, the reduction of 2d. or 3d. per 1000 cubic feet amounts to a very serious sum. If we had made the same quantity of gas between June, 1869, and June, 1870, that we made between June, 1870, and June, 1871, and had charged for it at the rate we have been obliged to take during the current half year, it would have made a difference of £21,000 against us. With such a difference, and the addition of £39,000 in the price of coal, the wonder is that we have managed to come out so satisfactorily as we have done. Of course, this state of things has had a great effect upon two matters which have always of late engaged the attention of our meetings. The first is the possibility of increasing the dividend. It is not often that we have to mention a retrograde movement, even though of so small a kind as the loss of £38 profit, but for the last half year we have to report that our profits were short by that amount as compared with the corresponding period of 1870. This is a very unusual state of things, and we may hope that it will not continue. At the same time, I presume there is no shareholder who would think, under the circumstances, that the directors would have acted otherwise than imprudently and incautiously if they had recommended an increase in the rate of dividend on the present occasion. The next question affected by the circumstances I have referred to, is the possibi-

lity of writing up any large amount to the sum paid on the shares of the association. That, of course, must depend very much upon the state of our profits. If our profits had shown such a sum as would have justified us in writing up a further sum on the shares of the association, there would have been a great readiness on the part of the board to adopt that course; but in the present state of things, the profits being so quiescent, we do not think it at all prudent to recommend such a proceeding. The shareholders must recollect it is not merely the fact that our profits are not increased, but they must also bear in mind that since our profits attained the same amount they are now at we have spent nearly £100,000 in various extensions. The expenditure of that sum has merely kept our income at the point it was before. We might fairly have hoped that this large outlay would bring £8000, or £10,000, or £12,000 increase to our profits. Instead of that, it has only had the effect (a very beneficial effect, doubtless) of keeping our profits at the point which they had previously attained. With regard to the future, we have, in the report, spoken of the circumstances affecting the price of coal as being very exceptional. With regard to the past, they are certainly exceptional; such a state of things never occurred before. With regard to the future, it is impossible to say what may happen. The principal circumstances which have caused a rise in the price of coal may never occur again; but whether coal will be at the same or at a higher price next year than it was last, is a matter of great uncertainty. Every one connected with gas interests is expecting a rise rather than a fall, and if coal rises higher, or even maintains its present price, it will have a very prejudicial effect upon our profits. We hope that the rise will be to some extent compensated by the additional value of coke and other residual products. Then there is also another question, which every shareholder in this association knows to be one of extreme delicacy—viz., the question of the renewal of our concessions. We have several stations the concessions for which will expire in five, six, or seven years, and of course we are anxious to obtain renewals at those places. We are doing all we can with that object, but at the same time the success of our endeavours depends not only upon the liberality and prudence of the steps we take, but to some extent upon the reasonableness of the parties with whom we have to deal. I think what I have stated will show that the directors are doing all they can to deserve the goodwill of the consumers and the municipal authorities, and I sincerely wish we may obtain from them a manifestation of a corresponding feeling towards us. On this point I cordially reciprocate the sentiments expressed in a note which I this day received from our esteemed president, Sir Moses Montefiore, and which I will now read. He says:

*East Cliff Lodge, Ramsgate, Nov.* 26, 1871.

My dear Mr. Twells,—With extreme disappointment I find that my health will not enable me to incur the fatigue consequent on a journey hence to town, and the risk which attaches to travelling in the present severe weather, and I hasten to convey to you the assurance of my sincere regret at my enforced absence from the board meeting to-morrow, and the general meeting on Tuesday, and to express my hope that you will kindly communicate to my esteemed colleagues present on those occasions my earnest apology for my non-attendance, which they will, I trust, attribute solely to my state of health. At the same time I desire to offer to the directors and shareholders of the association my cordial congratulations upon the favourable position evidenced by the report. To my mind it affords considerable satisfaction, that during a period when the whole of Europe was experiencing the misfortune resulting from a disastrous warfare, the profits of the association should show but a nominal diminution, as compared with those of recent years, and I do not fail to recognize, in the present prosperity of the association, the fruits of the valuable labours to which every one connected with its works has at all times devoted such untiring energy and assiduity. That this success may be not only enduring but increasing is my very ardent hope, in which I feel sure that you (to whose exertions so much is owing) will fully participate. I trust that you are in the enjoyment of good health, and remain, my dear Mr. Twells, yours very truly,

MOSES MONTEFIORE.

I now beg leave to move—"That the report of the president and directors be received, adopted, and entered on the minutes."

Mr. TURNER seconded the motion.

A PROPRIETOR: Allow me to ask a question, the answer to which I have no doubt will be interesting to the meeting. Would it not be desirable that we should each receive a copy of the report to be read at our meetings a few days beforehand, so that we might come prepared to ask for any further information respecting the affairs of the company which we require?

The CHAIRMAN: I presume the honourable proprietor means a printed copy circulated among the shareholders. If so, that is an arrangement to which the directors have always had a very strong objection. The accounts are open to the inspection of the proprietors at the offices of the association, and any of them who will take the trouble to go there may ascertain every particular for himself, but we feel the greatest objection to their publication. Not that we wish to withhold anything from the proprietors, but we believe the information communicated by the publication of the accounts would be made injurious use of by persons who are neither shareholders nor friendly to us.

A PROPRIETOR: There would also be the impropriety of circulating a report before it was adopted.

A PROPRIETOR: Can you tell us what amount of bonds were paid off during the six months?

The CHAIRMAN: Between December and June? £19,500, and since June to the present time, £26,050.

Mr. BARBER: May I ask when the remainder will be paid off?

The CHAIRMAN: The remainder fall due at very different times. We hope they will be paid off as soon as they can be. There are very few, if any, that we could pay off at the present moment.

Mr. BARBER: Considering these reductions in price, and the various difficulties the directors have had to deal with, I cannot help, for one, agreeing with the chairman in congratulating the shareholders upon the state of affairs disclosed by the present report and accounts. It appears, practically, that we have exactly the same profit now as we had this time last year. Last year it was £162,396; this year it is £162,359. The effect, therefore, of the war, and the heavy expenses we have in consequence had to encounter, is, that we have lost any increase we might have had by the growth of our business in the ordinary course of things. Whenever our assets will justify such a proceeding, I apprehend it will be very convenient to write off the whole of the liability upon the shares. I trust that good time will soon be at hand, and we shall find the directors adopting this mode of dealing with the question.

Mr. TURNER: In reply to the remarks just made, I may say that though no doubt it would be exceedingly pleasant to have the £6 5s. paid upon our shares, I believe before we do so we must first get out of "bond"-age. It will, therefore, be a very gradual thing.

Mr. BARBER: I think that state of affairs was altered by our last Act of Parliament, and that we are not now bound to keep a sufficient amount of uncalled capital to pay off the bonds. We could call up the remainder of the capital, and pay 10 per cent. upon it.

The CHAIRMAN: The honourable proprietor is quite right in saying that there was an alteration made by our last Act of Parliament, but that alteration had no retrospective effect. All the bonds issued in pursuance of our previous powers were issued on the basis that we kept sufficient uncalled capital to meet them. The amount of bonds existing at this time is less than it was last year; they now amount to £67,000, as we have paid off a portion—between £50,000 and £60,000. It is not as if the undivided profits were invested in Consols or Exchequer Bills, and were now available, because, out of the amount kept for extensions and enlargements we have paid off this £50,000 or £60,000. We have also expended, since our last Act of Parliament was obtained, £20,000 or £30,000 in the purchase of land. The available assets of the association are in a better position now than they were a year and a half ago, but you must remember that our income is not increasing; still we may, perhaps, hope for better times when the affairs of the Continent are more settled.

The motion was then put, and carried unanimously.

On the motion of the CHAIRMAN, it was resolved—"That a dividend of £2 per share be declared upon the 56,000 shares of the association for the half year ended the 30th of June last, and that the said dividend be payable, free of income-tax, on and after the 15th of December next."

On the motion of Mr. TURNER, seconded by Mr. F. BASSETT, it was also unanimously resolved—"That the cordial thanks of the meeting be given to the president and directors for their able management of the affairs of the association, and to the chairman for his conduct in the chair this day."

The CHAIRMAN, in acknowledging the vote of thanks to the directors, said: Gentlemen, in my own name, and on the part of my colleagues, I thank you most sincerely for this recognition of our services, and I assure you that no exertions on our part will be wanting to continue, and, if possible, increase the prosperity of the association.

## THE GASLIGHT AND COKE COMPANY.

An Extraordinary Meeting of the Shareholders of this Company was held at the Offices, Horseferry Road, Westminster, on Friday, Dec. 1—SIMON ADAMS BECK, Esq., the governor, presiding—to authorize the creation of £300,000 of new capital, under the company's Act, 1868.

The SECRETARY (Mr. J. O. Phillips) having read the advertisement convening the meeting,

The GOVERNOR moved the following resolutions:—

"1. That there be created a new A share capital not exceeding £300,000, in 30,000 shares of £10 each, and that such shares be all of one class and of like privileges.—2. That the directors be authorized to make the calls upon such shares, of such amounts and at such times respectively as they may think fit, and also, if and as they think fit, to receive from any of the holders thereof who are willing to advance the same, all or any part of the moneys due upon such shares beyond the sums actually called for, in accordance with the provisions of the Companies Clauses Consolidation Act, 1845.—3. That, subject to the payment of dividend on the existing 45,000 £10 5 per cent. preference A shares, 20,000 £10 10 per cent. preference C shares, and 12,000 £25 10 per cent. preference D shares, all moneys called up and paid upon the respective shares hereby created, bear dividend at the rate of £5 per cent. per annum, and that such dividend have preference over the dividends on the existing ordinary A shares and the B shares of the company; that any moneys paid upon any of the respective shares in advance of the calls made thereon, bear interest at such rate (not exceeding 5 per cent. per annum) as the holders of such shares and the directors may in any case agree upon; and that such dividend and interest respectively be payable half yearly, on the same days as the dividends on the existing share capital.—4. That from and after the end of the year 1876 the new shares hereby created be convertible, at the option of the holders thereof, into ordinary A shares, at par, and that the holders of the shares so converted be entitled to ordinary dividend thereon, without preference, rateably with the holders of the existing ordinary share capital.—5. That no proprietor shall be entitled to vote in respect of any of the new shares hereby created until such shares shall have been converted into ordinary A shares.—6. That the new shares be apportioned rateably among the shareholders holding in the company at the time of apportionment ordinary or £10 5 per cent. preference A shares."

These resolutions, he said, were precisely similar to those adopted at the time the last capital was created, and the object of the present issue was to meet the cost of extensions of works, and to complete those in hand.

The DEPUTY-GOVERNOR (the Hon. R. H. Browne) seconded the motion.

A SHAREHOLDER asked whether the shareholders in the late Great Centra ) Company would partake in the distribution of the new shares.

The GOVERNOR: No; nor the old Equitable shareholders.

The DEPUTY-GOVERNOR: Those are all guaranteed shares, and therefore not entitled to participate in the distribution.

The GOVERNOR: The ordinary shareholders in this company will receive them.

A SHAREHOLDER: I should like to have some further information as to the purposes for which the money is required.

The GOVERNOR: I said it was for the completion of contracts already in hand.

A SHAREHOLDER: I bear in mind what you stated on that point, but may I ask whether any of the money is wanted for the completion of the railway?

The SECRETARY: At the present time the company have spent £20,000 more capital than has yet been called up, and are, therefore, indebted in that amount to revenue. To complete the works already authorized the sum of £100,000 more is necessary. We shall have to replace working capital to the extent of £100,000. For new works and extensions of stations, in order to enable us to carry on the working of the districts, we require £350,000: total, £570,000. But part of these works will not be necessary at the present time; what is necessary now is to raise £300,000 for completing works already authorized, and to recoup ourselves a certain amount of working capital which we are obliged to keep in hand.

A SHAREHOLDER: Have the company power to raise more than £300,000?

The GOVERNOR: No; this amount is raised under our Act of 1868; it is all the capital we are able to raise, but we have given notice of a bill for next session to empower us to raise further capital. All we have to deal with to-day is the raising of the remainder of the capital authorized by the Act of 1868.

A SHAREHOLDER: Does it rest with this meeting to decide who shall participate in that?

The GOVERNOR: The provisions of the Companies Clauses Act control that.

A SHAREHOLDER: Does not the Act of Parliament allow you to apportion any of the shares to the City and Equitable shareholders?

The GOVERNOR: To the shareholders in the City Company it does, but not to those in the Equitable Company, because the capital of the former is not guaranteed.

A SHAREHOLDER: Then it is the Act of Parliament, and not the board, which controls the matter?

The GOVERNOR: Yes.

A SHAREHOLDER: I should like the question answered whether any part of this capital is required for the railway?

The SECRETARY: Yes, from £10,000 to £15,000.

The GOVERNOR: That is a part of the work already authorized.

A SHAREHOLDER: Then may I ask have you power to convey passengers and to charge tolls on that railway?

The GOVERNOR: Yes, under the Act of last session; but the railway is required for our own use.

Mr. YOOL: I think there is no one present who can do otherwise than approve of the proposition made to us by the directors. It is evident that since the new works at Beckton were proposed, a very large extension in the consumption of gas has taken place, and, therefore, it is absolutely necessary that this money should be raised.

The GOVERNOR: In proof of what has just been stated, I may say that when we were in Parliament in 1868, our supply of gas was 3000 millions of cubic feet per annum; it is now 4000 millions, so that in three years there has been an increase of 33 per cent.

A SHAREHOLDER: Will the new shares to be created take precedence of the existing preference shares.

The GOVERNOR: No; they will rank after the other preference.

Mr. PHILLIPS: The B shares of the late City Gas Company will not be affected by the allotment, whereas the ordinary shareholders of that company and of the Chartered Company will participate.

The GOVERNOR: The B shareholders will not receive any, because theirs are not ordinary shares. We gave the City Company so many of the first issue of 5 per cent. preference, and they distributed them amongst their B shareholders.

A SHAREHOLDER: Will the new preference be convertible into ordinary shares?

The GOVERNOR: Yes; in 1876, if the holders choose, they can convert them into ordinary shares of the company, so that if we are paying 10 per cent., as we did last time, they will get it. The shareholders who are entitled to these shares will receive them at par. The Great Central and Equitable shareholders who are 10 per cent. preference shareholders in this company, will not participate in the allotment, and it is not right they should, as they have no responsibility.

The motion was put, and carried unanimously.

On the motion of Mr. YOOL, a vote of thanks was given to the governor and directors of the company.

The GOVERNOR: Gentlemen, I thank you most cordially for the honour you have done us in passing this resolution. We shall continue to look after your interests to the best of our power, and I hope we shall do so successfully.

## THE GAS EXPLOSION AT LEEDS.

### INQUEST ON THE SUFFERERS.

On Tuesday, Nov. 14, an inquest was opened before Mr. EMSLEY, the coroner for Leeds, on the body of Michael Meaghan, aged 40, who was killed by the explosion of gas at the Corporation Gas-Works, Wellington Road, New Wortley, on the previous day.

The coroner and jury having viewed the body, proceeded to make a minute inspection of that portion of the works which had been affected by the explosion.

The TOWN-CLERK, before any evidence was taken, intimated that he appeared for the corporation, to express their very deep regret at this most unfortunate occurrence, and to say that it would be his duty to attend and to watch the inquiry on their behalf, so as to elicit, as far as possible, the truth, and to ascertain who, if any one, was to blame in the matter. He understood that only formal evidence would be taken that day.

The CORONER said that would be the case. He had instructed competent persons to ascertain the causes of the calamity, and the inquest would have to be adjourned in order that they might have time to complete their inquiry.

*Owen Meaghan*, labourer, residing at 37, Upper High Street, said the deceased, Michael Meaghan, was his brother, and was 40 years of age. He had left a wife and six children. He resided in Atkinson Place, New Wortley, near to the works, where he had been employed for 16 years.

Mr. *William Atkinson*, superintendent of the Liverpool and London and Globe fire brigade, said he was called to go with his engine to the scene of the explosion a few minutes before six o'clock on the morning of Monday, the 13th. On arriving there, fire was burning on the left-hand side of the yard, close to the engine-house. The place was called the purifying-house. There were other engines present, the corporation brigade being there first. The main body of the fire was put out in an hour, and was confined to the part of the works near to the engine-house. He saw the body of deceased first about ten minutes past seven o'clock. It was close by the engine-house, on the ground floor. Deceased was lying on his face, and rubbish covered the upper half of the body. There was a great weight of materials pressing upon the body. Witness called for assistance, and with the aid given by Inspector Greenwood and Inspector Merritt the body was conveyed to the engine-house. Deceased was dead, and quite cold. The reason that deceased was not seen before that time was that it was dark, and there was a good deal of dense smoke proceeding from coal tar on fire. On first entering the place, he could hardly see his way because of the smoke. There was no fall of materials after witness arrived at the works, that he noticed. The material that was burning had chiefly fallen down, and the roof over the engine-house was on fire. The spot where deceased was found was not in the yard, but inside a building, and the roof of that building had all gone. As far as he could judge, the appearance indicated that the falling rubbish had killed him. The trousers were all in a lump, as if they had been blown up his legs, which were bare. His hair seemed to have been burned. No part of the body was on fire at the time it was found.

*William Reynard*, labourer, employed at the gas-works, said he started to work at New Wortley a week ago last Thursday. He had been working at the place all night, and Meaghan was also engaged on the night shift. Twenty minutes before the explosion took place an escape of gas was noticed. The smell was very strong. Witness was near the engine-house, in the purifying-house, when the explosion occurred. Mr. Schofield and Meaghan were in the purifying-house also. Mr. Schofield was trying to discover where the escape was coming from, and the deceased assisted him. They took three boards up in the purifying-room, close to the engine-house. The gas could be heard rushing up between the boards. Meaghan got a rod of iron 4 yards long, with a bend at the end, and tried to do something with it that witness did not comprehend. Then Mr. Schofield took the iron, but subsequently resigned it to the deceased, and went and shut the valve off, making the remark at the time, "that his life was nothing to thousands." Mr. Schofield was not away four minutes, and then Meaghan put the iron in again, and the explosion occurred immediately. Witness was several yards off the deceased, who was down on one knee, drawing the rod out and in. Rhodes and Mr. Schofield were close behind Meaghan. Another man was beside witness, but he did not know his name. Witness thought he saw deceased blown upward, but he could not be sure of that. A purifying-box was blown to the top, and then witness was knocked down to the ground, and was insensible for a few seconds. On recovering consciousness he found his hands and feet fast, but was able to release himself. There was a man close to his back. Outside the building the flame was flashing up, and witness rushed through it and got his hair on fire. He cried out that they would all be killed, and ran away out of the works, thinking that the whole place would be blown up. He saw nothing more of either Mr. Schofield or the deceased.

*John Aston*, labourer, had been employed at the gas-works since Saturday, and was one of the night hands. He had noticed the gas escaping from the syphon-box three-quarters of an hour before the explosion. The syphon-box adjoins the engine-house wall. He did not understand what Mr. Schofield and the deceased and the engine-man did to stop the escape, but they put a lot of water down into the cellar, underneath the box. Witness was about two yards off Meaghan at the time of the explosion. Deceased was using a rod, but with what object witness could not tell. He was kneeling, and looking down the opening. Witness was injured on the left eye and down the left side of the face, but was not rendered insensible. The explosion lifted Meaghan entirely out of his position, and then it threw witness down, after which he did not see deceased. There was a great crash, and a mass of material fell, but nothing very weighty fell on witness.

At this stage of the inquiry it was agreed to adjourn until Thursday, the 23rd.

### THURSDAY, NOV. 23.

At the opening of the inquiry this day, it was stated that Mr. Schofield, the resident manager of the works, and Samuel Rhodes, the engine-man, had died at the infirmary in consequence of the injuries sustained by them. The coroner and jury, therefore, proceeded to view those bodies before receiving fresh evidence. On their return,

*William Reynard* was recalled. He said Mr. Schofield was called up after the escape of gas was discovered, and three boards were taken up from the floor after Mr. Schofield came. It was about twenty minutes after Mr. Schofield's arrival that the explosion took place. The smell was strong before Mr. Schofield came, but it was much stronger after the boards were taken up. The lights in the purifying-house were glazed in. There was an open doorway without a door leading from the purifying-house to the engine-house. There were open lights in the engine-house. There was a doorway in the boiler-house also.

Mr. *McGill*, house surgeon at the infirmary, stated that Rhodes when brought to the infirmary was badly burned about the head, face, and hands, and also on the lower part of the body. All these parts were covered with coal tar. He died on Tuesday, from blood poisoning caused by the burns. Schofield's injuries were of the same description, except that the lower part of his face was not so badly burned, and he had in addition a large scalp wound. He died early the previous day morning, also from blood poisoning.

*George Fawcett* stated that he had been in the employ of the company for 21 years. He was foreman of the stokers. He arrived at the works about twenty minutes past five on the morning of the explosion, and was told that there was an escape of gas. He examined all the condensers, and found all right there. He afterwards came back to the purifying-house and found that the escape was in the room at the back of the engine-house. While he was there Schofield came rushing in, and ordered the men to pull up two boards in the floor. The boards were pulled up, and Schofield inserted a syphon wire into the syphon. Witness afterwards went along with Schofield to the back of the condensers, and they there pulled up a safety-valve, the object being to let the gas blow away, and to prevent it from going through the syphon. Witness remained with the safety-valve, and Schofield returned to the purifying-house. About two minutes after he had gone witness heard the explosion. He ran round to the purifying-house and called out Schofield's name. He received no answer, and he then called out to the men to strike all the retorts. He saw a blackened figure coming out of the meter-house, which he afterwards discovered to be Schofield, and he saw Rhodes come out of the same place. Both Rhodes and Schofield were taken to Schofield's house. Four lights, which were all protected, were burning in the purifying-house that morning.

Cross-examined by the TOWN-CLERK: Witness said the lights and other arrangements were the same as they had always been during his experience.

*Thomas Kelly*, who had been employed at the works six years, gave somewhat similar evidence to the preceding. He said that when the escape was discovered, the boards of the floor above the syphon-box were removed, and three pitchers of water were poured in, but they could get no water into the syphon-box, as they could not remove the cover. The explosion occurred ten minutes or a quarter of an hour after the boards were taken up. He also stated that there were four lights burning in the purifying-house, which were all protected on the side of the purifying-house. One of the lights was lighted in the engine-house, one in the retort-house, one in a passage, and another outside. The one lighted in the engine-house would be open there. There was one more light in the engine-house, and it was not protected, but it was at some distance. Nothing was said before taking up the boards about putting out all lights and fires. They had had slight escapes before, but had always been able to stop them by pouring in water.

By the TOWN-CLERK: The explosion seemed to be caused by the engine fire.

Mr. *Charles Smith*, manager of the gas-works of the Leeds Corporation, said he had been connected with the works 39 years, and had been manager for six years. The syphon-box above referred to was an additional one put in by Mr. Schofield himself two years ago. It was passed to witness's satisfaction before it was put in. It had worked satisfactorily up to the time of the explosion. Witness was called to the works on the morning of the explosion about half-past six, and when he arrived he found the place burning. He saw that the back pressure from the meters was turned off and the retorts struck, and all done that was possible to prevent an explosion. Witness examined the spot where the accident occurred, and the conclusion he came to was that the purifying-boxes had been overladen—by which he meant that too much purifying material had been put into the three boxes which were blown up. The purifying material used was dry copperas and sawdust. It had been used for nearly four years; previous to that, lime was used. Meaghan would have the management of putting in the purifying material. The object of putting in too much purifying material would be to save a change of it. The effect would be to throw an increased pressure of gas upon the syphon-box. Turning a wrong valve, so as to shut the gas in and prevent it flowing, might also be a cause. An accumulation of crystallized ammonia in the pipe would have the same effect. If the syphon-box had been deeper, the explosion might have been avoided. It was 1 foot 8 inches deep, which was as deep as they are generally made. They had considered that the lights of the engine-house were quite safe, and it was also considered that there was no danger from the boiler fire, as there was a large ventilator at the top of the purifying-house; but if the wind was blowing in that direction, no doubt the fire would attract it. Escapes had taken place from the syphon-box before, but never anything like this. In witness's opinion, the lid of the syphon-box had got fixed by the copperas falling through between the boards in the floor on the top of it, and getting glued together with tar. If the lid of the syphon-box could have been got off, two or three buckets of water poured into the box would have prevented the explosion. The rod of iron which had been spoken of, with a hook at one end, was used for removing the lid of the syphon-box. Witness would recommend that the syphon-boxes should be deeper in future, and that they should be outside the building. If there had been no doorway between the purifying-house and the engine-house, the gas would have escaped at the top of the building; but witness believed that the gas had been drawn through this doorway towards the boiler fire.

By the TOWN-CLERK: During the time witness had been employed as manager under the corporation he had never made any report or application to the corporation which had not been attended to. Mr. Schofield was resident engineer, and was well qualified for that position, as he was a practical gas engineer. The syphon was considered quite deep enough for the work it had to do. As long as the tar was running out of the lip of the syphon it was considered to be working well. It would have been better if they had occasionally examined the syphon-box, to see that the lid could be readily removed, and that the apparatus was otherwise in good working order.

By the JURY: They had never had a lid stick fast before.

Mr. *John Arnott*, gas engineer, 53, Belle Vue Road, Leeds, said he had had above 27 years experience as manager of gas-works. He had examined the works where the explosion took place. He found the first purifier to be rather overloaded, as Mr. Smith stated. He had carefully examined the syphon-box which had been blown up. He found it to be of the usual form, but not deep enough in the dip-pipe. It was about 18 inches deep. He seldom put them in less than two or three feet deep. He did not consider the position of the syphon-box safe, especially under cover. He generally put them in the open yard, where there was a clear space and no danger. He believed that the first cause of the explosion was that too much purifying material had been placed in the boxes, by which too great a pressure had been put on the syphon-box. The second cause was that the dip-pipe was not deep enough. He was of opinion that had the dip-pipe been deeper, or had the syphon-box been placed in the yard, no explosion would have occurred. The first thing he would have done, after discovering that a serious escape was going on, would have been to

put out the boiler fire and the lights in the engine-house. That was a point that had been overlooked, and in his opinion was the immediate cause of the explosion. He did not consider it safe to have unprotected lights in the engine-house, so near the purifier. It was his custom to use large sized Davy lamps for that purpose. It was not possible for a gasholder to explode, even if there was a large rent in it; if a light were applied to it, it would blaze, but not explode. The reason why the gas escaping from the syphon-box exploded was that it got mixed with atmospheric air before it came into contact with flame. A mixture of five cubic feet of air with one of gas would explode feebly, but it required a proportion of nine parts of air to one of gas to make it thoroughly explosive. He found no other faults in the construction of the works than those he had stated.

By the TOWN-CLERK: Mr. Smith had arranged to remove the syphons outside into the open air. While managing the works of the new company in Leeds, he took all the syphons out of the purifying-house.

Mr. *Herbert Unwin*, gas engineer, and chief engineer of the gas-works at Sheffield, and also engineer to the gas-works at Penistone, said he had made an examination of the works at New Wortley on Saturday last, along with Mr. Arnott. He believed that the syphon-box would have been sufficient if the retorts had been charged regularly, but at the time when the explosion occurred, there would be more than ordinary pressure caused by the men overcharging the retorts. He substantially agreed with Mr. Arnott as to the cause of the explosion.

The TOWN-CLERK at this stage expressed the regret of the corporation at the accident. If anything could be suggested, after the best advice, the corporation would be glad to adopt it. Hitherto they had had no suggestion made to them of any repairs, amendment, or reconstruction. Any suggestion which might be made would be carried out.

The CORONER: I am quite sure the corporation will do everything that is necessary.

The TOWN-CLERK said that since the corporation had purchased the works they had done everything they could in the way of employing sufficient labour.

The CORONER expressed his opinion that, from the evidence, no blame could be attached to the corporation.

Some evidence having been given for the purpose of identifying the bodies of Schofield and Rhodes,

The CORONER summed up, and the jury, after a few minutes consultation, returned a verdict to the effect ,that the occurrence was accidental, and they recommended that, wherever practicable, the syphon-boxes and dip-pipes should be made deeper, and that they should be brought out into the open air.

## ALLIANCE AND DUBLIN CONSUMERS GAS WORKS.

[From *Saunders's News Letter*.]

Some two or three years ago the Alliance Company became amalgamated with the Hibernian and Commercial Gas Companies, and continued the united firms under the title of the "Alliance and Dublin Consumers Gas Company," thereby having a monopoly for the supply of gas to the city. But we are happy to say that although the new company enjoyed a monopoly, they are now endeavouring to show on a pretty large scale that they deserved it—that if "unity is strength," they are determined to exert it, not only on behalf of themselves, but of the public generally; and, from the arrangements for a better supply of light which we saw in progress, we are rather inclined to think the public will have the advantage. We believe, however, that the company will also be in the end the gainers. Since the amalgamation the new company has had a good deal of uphill work, and no doubt well-grounded complaints were made of an insufficient supply of gas to the streets and the various extensive gas consumers in town. But when the gigantic character of the work they were engaged in is considered, and the operations they are undertaking to remedy the deficiency, we are satisfied that not only will the public condone the company for past shortcomings, but be so fully supplied as to all their requirements in the future as to have not the slightest grounds for complaint. This statement is, of course, encouraging, but we make it advisedly, considering the difficulties to be encountered by a new company and the necessary shortcomings that must have resulted from "divided action." We are glad to say that the company is prosperous; that during the half year ending in June there was a dividend of 8 per cent., free of income-tax, declared, the profits being nearly £18,000. The public have had, however, frequent complaints to make, and the company, while doing, we believe, their utmost to remedy short supplies of gas, to bear a good deal of odium, though at the same time endeavouring to use all their resources in the most efficient manner for the public benefit. We have inquired into the cause of occasional deficient supplies of light throughout the city, and ascertained that it has resulted from an insufficient supply of storeage or "gasholders," those belonging to the companies now amalgamated being unequal to the task of supplying the city when an emergency—such as a dark or foggy day—occurred, such as we have had during the present month of November. Nearly six hundred men were occupied day and night in the manufacture of gas; but the difficulty was to store it for night consumption, and this is now being obviated by the erection of an enormous gasholder, on ground purchased by the company at Barrow Street, near Grand Canal Street. The area of the new ground is about eight acres, and on it is being erected a gasometer, or gasholder, of enormous dimensions, capable of containing 1,300,000 cubic feet of gas, or equal to the supply of the entire city for three hours. It is 184 feet in diameter and 56 in height, whereas the three gasholders in the station in Great Brunswick Street are as follows:—Smallest, 50 feet high and 120 feet in diameter; the next, 50 feet high and 130 feet in diameter; and the largest, 54 feet high and 150 feet in diameter. These are equal to the storeage of somewhat over a million and a half cubic feet of gas, or about a quarter of a million more than that which is now in process of completion. The powers of supply on the part of the company will, therefore, be not far from doubled when the new works are completed, and we expect to hear no more complaints then of an insufficient supply as to quantity or quality of the gas. The retort power of the company has always been up to the mark—that is, they could manufacture any quantity of gas they required. The difficulty was that they could not store it until it was required, and when two or three dark November days came upon the city the supply was insufficient. The new gasholder must remedy all this. It will be connected with the present gasholders by means of a 30-inch iron pipe run under the ground from the present works, and which will cross the Grand Canal alongside the bridge by a nice piece of engineering. It will span the canal in three faint bends, supported by two pedestals, and will be continued down Barrow Street into the holder. The gasholder is all but completed, and looks a stupendous undertaking, but the piping is not yet laid down. A very short time, however, will suffice on the completion of the gasometer to place it in connexion with the works, and allow the company to derive the benefit. It is the intention of the company to charge this gigantic holder during the day and draw from it during the night. It is in direct communication with the present gasholders, and the pressure it will afford can drive the gas to the remotest portions of the city with good effect. The ground on which it stands will be enclosed by a high wall, substantially built. The new gasholder is being constructed by Messrs. Aird and Sons, Lambeth, London, who are more extensively engaged in that line than any other contractors in the United Kingdom. The mechanics are all Irishmen, and the works are carried out under the direction of Mr. Somerville, C.E., the very efficient engineer of the gas company's works at Great Brunswick Street, whose courtesy and kindness, as well as his intelligent explanation of the various processes to be gone through before the "fish-light" can be ignited, we have candidly to acknowledge. The works at Brunswick Street are certainly of a stupendous character, covering 15 acres of an area, and a visit would be of the most interesting character. As we said before, there are about 600 men employed, in day and night reliefs, for the public must always be supplied, and the work never ceases, though, of course, at night it is carried on rather more briskly than in the daytime. These men are paid, for mere labourers, from 14s. to 29s. a week—that is, for labourers and stokers—while better workmen are better paid, in proportion to quality and status. Whether the nature of the work is unpopular or not we cannot say, but even at these rates of wages there is a difficulty in getting men, although much is done for their comfort, and more will be attempted that is not thought of elsewhere. The quantity of coal used varies according to the season. There was less in summer than during last week, when there were 2500 tons used, whereas at Christmas it may go up to 3000 tons. The average amount used in the year is 95,000 tons, representing a pretty large figure in cash. The kinds used are Wigan, Newcastle, and cannel coal, and it may be mentioned as an interesting fact that these coals are conveyed from the mines across the Channel in screw steamers; that they are unladen alongside the company's works, and are almost immediately transferred to retorts. It is a matter of very frequent occurrence, therefore, we were informed, for the inhabitants of this city to be reading or writing on, say, Tuesday evening by the gas from coal that had been lying for unnumbered centuries in a coal-bed till the previous Monday morning! In fact, it was excavated, shipped, carried across the Irish Sea from Wigan, and converted into gas and coke in 36 hours! There is an immense demand for the coke, and all is easily disposed of that can be spared. Of every 20 cwt., or ton of coal, about 13 cwt. comes back in the shape of coke, and of this about one-half is consumed under the furnaces for the engines and retorts, so that about one-third of every ton of coal is sold again as coke, of course at a much reduced figure, but still producing a considerable revenue. The cost of coal at 18s. 6d. per ton must amount, however, to a nice figure, and when to it are added salaries, dividends, material, &c., the expense must rise to something enormous before the first 1000 cubic feet of gas are sent through the pipes. A visit to the works at first sight has a most confusing effect on the visitor. He is overawed almost with the quantity of smoke and flame, through which numbers of coal-begrimed men are seen hurrying hither and thither in what to him seems hopeless confusion. Drays are bringing coal, and drays are carrying off coke still smoking from the fiery ordeal through which it has passed in the retorts, while in the centre of the large yard men are emptying from iron hand-carts the loads of coke—resembling burning lava—from which the gas has just been extracted. All is noise and bustle, but there is little or no confusion, while to the casual observer there appears to be overmuch of it. The work cannot be gone through without fire, and smoke, and noise, and there is abundance of all three, and yet there is an admirable order in the manner of them. The retort-house, where the gas is manufactured, is a wonder of art, and must present the appearance of a perfect Pandemonium when in full play at night. On both sides of an almost interminable-looking wide corridor or hall the iron mouths of the retorts are ranged, with a furnace beneath every nine, arranged in rows of three each. These the men engaged in the work—as black-looking as the coal they are handling—are engaged in emptying of the gas-exhausted coal, or filling with fresh, by means of immense rakes for emptying, or scoops for filling, which not less than three men are able to operate with. The iron doors are covered with a composition that hermetically seals them when they are closed, and as they are opened the flames burst forth in awful grandeur, giving the interior of the building a strangely wild appearance—as nearly as possible to poetic descriptions of the infernal regions. This work continually goes on—day and night—every retort having to be emptied and refilled every six hours, and the men can hardly accomplish them all in that time. All day and night long there is the continual hurry of men to bring the coal, to clear the retorts, refill them, and carry off the burning coke. An apartment equally long and equally imposing is parallel to this, and there the same scenes occur day and night throughout the year. There is a second storey over each, in which machinery has been called to aid with considerable effect. The arrangement of furnaces and retorts is the same, but on the iron-plated floor is laid down a tramway, on which is a patent "steam-stoker," moved along by a small engine, and directed by a couple of men. This machine moves along to three retorts in which the coal has been exhausted—the doors are opened, and three long rakes thrust in. They draw out all the coke, which falls through an opening of the floor into an iron waggon below. Three scoopes are then filled with coal from a hopper above, and these, moving forward into the empty retorts, overturn, and are then withdrawn. Each operation only occupies a very short time—perhaps a couple of minutes. The machine and men mingled in the smoke and flames from the open retorts present a strangely weird appearance. A huge chamber of a similar kind runs parallel to this—both being over the two already described on the ground floor—and it is furnished with a similar machine, while in each a machine is held in reserve in case of accidents. There are other retort-houses, in which the gas manufacture is carried on in a more primitive manner, according to the old plan. These retorts are wide, and long tubes placed horizontally in three rows, one above the other, and there are about a thousand of them to be attended to four times each in the 24 hours. From these retorts the gas is conveyed by pipes, varying from 15 to 30 inches in diameter, into a huge main-pipe above, and after passing into which the communication with the fire below is cut off by water ingeniously interposed. These tubes are ever so many miles in length, and the whole of the upper portions of the works in which the retorts are fixed are surmounted with an apparently endless interlacing of them. From the huge tube above mentioned into which the smaller ones discharge their contents, the gas is passed through several purifying processes, the names of which would but puzzle our uninitiated readers, until it is finally lodged in the gasholders, and thence forced into the city through various channels for consumption. The engine-house contains the largest of the kind ever made of Anderson's gas-exhausters, with cylinder 47 inches in diameter by 47 inches in depth. It is capable of passing from 150,000 to 200,000 cubic feet of gas an hour through it. There is also another machine for the same object, by Beales, with two cylinders, one equal to the work of 100,000 and the other of 80,000 cubic feet per hour. In this room are also the gauges, by which the workings of the various processes are indicated, and defects at once ascertained. There is also Lowe's jet photometer improved, by which the exhausters are regulated, and the quality of the gas is corrected. Six inches of flame from the "steatite" jet, 7 inches in height, are equal to 16½ candles, and the pressure is regulated to keep that light steady by an engineer, always on the spot, who keeps a register of the appearance it presents. Then there is the "governor" or "indicator" room, in which is one of the largest meters ever made. When we visited the room, the indicator showed that 140,000 cubic feet of gas had passed through within the last hour into the gasholders. There were six "governors," without which the pressure would force the water out of the meters in dwelling-houses into the tubes, and the gas would be useless. There are regulators, one for each of the following:—Pembroke Township, Rathmines, Dundrum, large business offices (such as newspaper establishments, hotels, and public offices), the North City, and the South City. The laboratory is fitted up with all the most recent and most improved apparatus necessary for such a great work as this. The gas is tested, weighed, and measured, and experiments performed that we cannot stop to describe. Special mention may be made of N. H. Schilling's (Munchen) apparatus for ascertaining the specific gravity of gases, which is of recent invention and very accurate. It was manufactured by Messrs. A. Wright and Co., of London. A day might fairly be spent in examining these interesting and stupendous works without exhausting the

material worth examining; but we think we have said enough to prove that the new company are carrying on operations in no niggardly or un-enterprising spirit, and that when the new gasholder is ready for use, there may be no further fears of a bad or insufficient supply of light. The new gasholder alone will cost £18,800, and to this is to be added the buildings and piping which are not yet laid down, from the works in Brunswick Street. Gratifying testimony has recently been borne by an independent and competent authority to the excellence of these gas-works. In the number for the 2nd of November of the *American Gaslight Journal and Chemical Repertory*, published in New York, appears an article headed "The Dublin Gas-Works." It is written by Professor W. H. Chandler, of the *American Chemist*, who was recently on a visit to this city. The article is of some length, and we can only make room for two or three of the most interesting passages. After speaking of the advantages possessed by Dublin over American cities in having the means of procuring abundant and cheap gas, Professor Chandler goes on to say:—"The Dublin Gas-Works is one of the best managed works in Great Britain, and we find there several points of interest. The clay retorts are set in benches of nine, and closed with the self-sealing doors, which have machine-turned edges, and, being attached to the retort by hinges, are brought in close contact with the iron facing of the retort, also perfectly true, by means of an iron lever. The doors are thus closed gas-tight, without luting, thus saving the expense of the latter, as well as the cost and delay in handling doors, as with us. The steam-stoker is employed, and with two of these machines and eight men 540 retorts are charged and discharged, the retorts being worked in six-hour charges, the men working twelve hour relays. The machine empties three retorts at a time, by means of as many long rakes, which are thrust into the retort and rake out the coke, which falls through an opening in the floor into the iron waggon. Three scoops, filled from a hopper with coal, are then moved into the retorts, overturned and withdrawn. There are three men upon the machine, one controlling the steam, one the valves that fill the scoops, and one the movements of the rakes and scoops. A fourth man stands upon the floor to sweep up whatever may fall thereon during the operation. This is certainly the most expeditious working of retorts I have ever seen. A portion of the tar is also consumed upon the spot in making a patent fuel with the coke breeze, which is thus cemented into cylinders of 4 inches diameter and 1 foot in length. Some year or two since the city compelled the works to adopt the iron process, and for purifiers the engineer adapted two disused gasholders. At the bottom, 1½ foot in depth of lime is placed, and then, supported by as many trays, six layers of a mixture of bog iron ore and sawdust, each layer 1½ foot thick, and finally another layer of lime. The purifier works well, delivering gas containing 20 to 25 grains of sulphur and 1 per cent. carbonic acid, and with a moderate pressure. This use of the layer of lime confirms a previously formed opinion of the writer as to the benefit of its employment in the iron process of purification. To re-enumerate, therefore, the noticeable pecularities of these works we mention the self-sealing retort-doors, the steam-stoker, the use of the mixture of coal and coal tar, thus, as it were, consuming the coal tar upon the premises; the two enormous purifiers, formerly two gasholders, and a depth of nearly 10 feet of purifying material therein."

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AVERAGE COMPOSITION AND QUALITY OF THE METROPOLITAN WATERS, IN NOVEMBER, 1871.—The following are the returns of the Metropolitan Association of Medical Officers of Health:—

| NAMES OF WATER COMPANIES. | Total Solid Matter per Gallon. | Oxygen required by Organic Matter, &c. | Nitrogen. | | Hardness. | |
|---|---|---|---|---|---|---|
| | | | As Nitrates, &c. | As Ammonia. | Before Boiling. | After Boiling. |
| *Thames Water Companies.* | Grs. | Grs. | Grs. | Grs. | Degs. | Degs. |
| Grand Junction | ... | ... | ... | ... | ... | ... |
| West Middlesex | 18·97 | 0·018 | 0·139 | 0·000 | 15·0 | 3·5 |
| Southwark and Vauxhall | 20·33 | 0·071 | 0·112 | 0·005 | 15·8 | 3·7 |
| Chelsea | 21·17 | 0·076 | 0·129 | 0·005 | 16·1 | 3·8 |
| Lambeth | 20·33 | 0·075 | 0·131 | 0·002 | 15·8 | 3·5 |
| *Other Companies.* | | | | | | |
| Kent | 27·87 | 0·013 | 0·242 | 0·000 | 20·1 | 5·8 |
| New River | 20·77 | 0·026 | 0·140 | 0·001 | 16·0 | 3·7 |
| East London | 21·79 | 0·053 | 0·119 | 0·003 | 16·2 | 4·2 |

*Note.*—The amount of oxygen required to oxidize the organic matter, nitrites, &c., is determined by a standard solution of permanganate of potash acting for three hours; and in the case of the metropolitan waters the quantity of organic matter is about eight times the amount of oxygen required by it.

The water was found to be clear and nearly colourless in all cases. The average quantity of water supplied daily to the metropolis during the preceding month was, according to the returns of the water companies to the Association of Medical Officers of Health, 105,645,974 gallons; and the number of houses supplied was 491,485. This is at the rate of 32·4 gallons per head of the population daily. HY. LETHEBY, M.B.

DR. STEVENSON'S REPORT ON THE ILLUMINATING POWER OF THE GAS SUPPLIED IN ST. PANCRAS, IN NOVEMBER, 1871.—The average illuminating power of the gas supplied by the Imperial Company during November, 1871, was 15·0 standard sperm candles; the maximum being 15·6, and the minimum 14·5 candles. The illuminating power was on every occasion of examination above the statutory minimum; and the gas was of rather better quality than usual as regards illuminating power. Of impurities, small quantities of ammonia were always detected; sulphuretted hydrogen was as invariably absent; whilst sulphur in all its forms was present to the extent of 22·8 grains per 100 cubic feet. This is about the usual amount of sulphur present in the gas furnished to the parish. T. STEVENSON.

THE LATE MR. T. LIVESEY.—The will of Mr. Thomas Livesey, late secretary of the South Metropolitan Gas Company, has been proved under £25,000 personalty.

THE BARNSLEY GAS-WORKS AND THE CORPORATION.—The officials of the Barnsley Gas Company have issued notices to the shareholders, calling a meeting "for the purposes of considering and determining whether negotiations shall be entered into for the sale of the company's works to the Corporation of Barnsley, and, if it shall be decided in the affirmative, of passing such resolutions and orders as may appear necessary and expedient."

THE GAS QUESTION AT HEREFORD.—At the last meeting of the Hereford Town Council, the Special Gas Committee reported as follows, viz.:—"Gentlemen,—Your committee report that, in pursuance of the powers given them, they have conferred with the gas company upon, and finally settled, the terms of the deed of contract and submission to arbitration, and they present such deed for execution by the corporation under the city seal. Your committee beg to report that in order to meet the wishes of the public, they have given directions for the public lamps to be lighted up to the 30th of December, some 50 minutes earlier than the printed list, so that the time for lighting will in future be according to the hours fixed in 1865."

STRIKE AT THE DARLINGTON GAS-WORKS.—For the last two nights the streets of Darlington have been in darkness, none of the public lamps having been lit, owing to a strike of the gas-makers to the number of 22. It seems they had given notice, asking for a rise from 28s. to 30s. The Gas-Works Committee of the Town Council had either not had time to consider the demand, or had come to no decision on the matter. The men were peremptory in their demand, and could not be induced to wait to see the result of their application. They therefore struck on Friday night. By the aid of the labourers who remain, and other assistance, sufficient gas has been made, and of good quality, to supply the private consumers and shops, and as the early part of the nights are illuminated by the moon, no very great inconvenience has been experienced from the street-lamps not being lighted.—*Leeds Mercury.*

INTRODUCTION OF GAS TO UFFCULM, DEVON.—The opening of the new gas-works in the above town was celebrated with much rejoicing on Tuesday, Nov. 21. The works have been erected in a most satisfactory manner by Messrs. Willey and Ford, gas engineers, Exeter, from plans provided for them. On Tuesday evening the town was beautifully illuminated, large gas devices being distributed in the principal thoroughfares. At the time appointed the gas was turned on, and most of the houses, shops, the large brewery and malt-houses, and the residences of Wm. Furze, Esq., and G. Marker, Esq., &c., were all lighted with gas. The effect was very brilliant. There was a bountiful supply of the purest quality gas, and as every burner was put into use the capabilities of the works were most satisfactorily tested. The directors and the shareholders dined together in the evening at the Commercial Hotel, in honour of the event. —*Exeter and Plymouth Gazette.*

FEARFUL EXPLOSION AT A RAILWAY CLEARING-HOUSE. — Shortly after five o'clock on Wednesday evening the vicinity of the terminus of the London and North-Western Railway had its inhabitants thrown into a state of fearful consternation by an explosion of such a character as not only to shatter many windows, but to shake a number of the surrounding houses in Seymour Street and Bedford Street, in close proximity to the railway clearing-house, to their foundations. It appears that for some time a number of carpenters and other workmen have been employed in making alterations, especially at the northern end of the clearing-house, forming the corner of Bedford Street. About twenty minutes past five o'clock, nearly the whole of the clerks having fortunately left at five p.m., a terrific explosion of gas took place, blowing the whole of the windows on the Bedford Street side into the street, portions reaching the Russell Arms and houses on the opposite side. It is believed the gas-piping had been removed or broken, causing the gas to escape.

MONTROSE GAS COMPANY.—The annual dinner of this company recently took place in the Queen's Hotel, Montrose. Mr. R. Walker, banker, chairman of the company, occupied the chair, and Mr. T. Middleton, croupier. About thirty gentlemen were present. The dinner, supplied by Mr. Heckford, was served in excellent style. Amongst the toasts, that of "Continued prosperity to the gas company" was very cordially welcomed; and in connexion with that, whether the movement for the transfer of the company's works to the town should succeed or not. It was acknowledged by all the speakers that in Montrose gas is supplied of even a purer quality and at as low a price as in most other towns in Scotland. The chairman, in replying to the toast, expressed his desire on behalf of his co-directors to supply the public with gas as pure and as cheap as it is in their power to produce; and he thought that they were now doing so. The gas company had no objection to allow their works to be transferred to the corporation, and it was a matter of sincere satisfaction to himself, as well as to the other directors and the shareholders generally, to know that should such a transfer take place, the works would be found in excellent working order, and worth all the money the public would be called upon to pay for them.

PURCHASE OF GAS-WORKS AT OSSETT.—On Wednesday last, a meeting of the owners of property and ratepayers (in pursuance of a resolution passed by the local board to consider whether that body should be empowered to purchase the works of the Osset Gaslight Company) was held in Trinity Church School-Room. From 300 to 400 persons were present. The Rev. Thomas Lee presided. Mr. C. T. Phillips, a member of the local board, said he was the mover of the resolution passed by the local board to convene that meeting. He believed there was a general desire that the gas-works should become the property of the town, and as the gas company were just about to apply to Parliament for increased capital and powers, he thought the ratepayers should be consulted. In reply to questions, Mr. Joseph Stringer, the clerk of the local board, said it was too late for this session to apply to Parliament for power to purchase, but they might oppose the application of the Gaslight Company. Mr. Joseph Ellis moved—"That this meeting authorize the Ossett Local Board, either solely or in conjunction with the Horbury Local Board, to purchase of the Ossett Gaslight Company their plant and works, at such price as the board or boards may agree upon with the said company." Mr. John Hey seconded the motion, which was put, and carried unanimously. A committee of twelve was then appointed to negotiate with the gas company through the local board, and, if necessary, to raise funds to oppose their application. The meeting was adjourned to the 14th inst., when a report is to be presented of the result of the negotiations.

THE GAS QUESTION AT HALIFAX.—At a meeting of the Town Council recently held, Mr. Bairstown said that, if they referred to the amount of gas profits which had been appropriated in liquidation of the rates during the last two years—*i.e.*, 1869 and 1870—they would find that in the year 1869, 9d. and a fraction—but they would leave the fractions out, because they could do very well without them—in the pound upon the whole rateable value of this borough was appropriated in liquidation or substitution of a rate; in the year 1870, 8d. And when they took into consideration that 3s. 10d. was the average price at which gas had been sold to all consumers, they would naturally conclude that the actual price of gas had not been more than 3s. 2d. The proposition which he made that day, if carried out, would reduce it to 3s. 4d., leaving, as he considered, ample margin for all legitimate purposes, and any contingencies that might arise. The price of gas in Halifax compared with neighbouring towns, amounted to 33½ per cent.—more than in Huddersfield and Bradford. If it was 3s. 8d., it was about 22 per cent.; and if reduced to 3s. 4d., it would be 11 per cent. higher than it was sold at in the towns he had mentioned. He moved a resolution to the effect that the resolution passed at the last council meeting should be rescinded, and that in place thereof the price of gas should be reduced to 3s. 4d., and that the rates should be increased from 2s. 6d. to 2s. 10d. in the pound, to commence on the 1st of January next. After a lengthy discussion, in the course of which the mayor expressed himself favourable to a committee being formed to investigate the subject, the motion was lost.

THE GAS QUESTION AT YORK.—At the last meeting of the York City Council, the Gas Purchase Committee in their report stated their opinion that until the Legislature shall have removed the restrictions which the case of the Sheffield Corporation has shown to attach to the free action of Municipal Corporations, in all such matters as the supply of gas and water, and others of a kindred nature, it is unreasonable to expect that the risk and responsibility for the expense attendant upon parliamentary action on behalf of a whole community, should rest upon the individual members of a municipal body. It is a responsibility which in the present case the committee cannot recommend to the adoption of the individual members of the council. The committee therefore advise the council to defer any application to Parliament until it shall have been placed on the same legislative equality with, and possesses the same freedom to act for the city, as the board of directors of the gas company now possess to

act for their own proprietary; and in the meantime the committee recommend that with a view to the operations of the gas company being kept under constant supervision, this committee be reappointed, with power to take such steps from time to time as they may deem necessary in the interests of the city. The committee direct the attention of the council to the fact that the gas company has already announced a reduction of price as from the 1st of January next to 2s. 6d. per 1000 cubic feet, while an intimation has also been publicly given by the official organ of the company, from which it would appear that a still further reduction is in contemplation. The information in the hands of the committee is such as to leave no doubt as to the ability of the company to make such further reduction and still maintain its statutable dividend; but it is essential that this reduction should be accompanied by a considerable increase of the illuminating power of the gas according to a fixed standard, and also oy the enforcement of the requirements of the company's Act not hitherto complied with; and it will be the object of the committee, if reappointed, and pending such parliamentary action as may hereafter become necessary, to seek to secure these advantages at the earliest possible period. Mr. Mann moved that the report be adopted, and Mr. Crummack seconded the resolution, which was agreed to unanimously.

THE SEWAGE OF CAMBRIDGE.—Mr. J. Bailey Denton has issued his report upon the condition of the river Cam and the question of diverting the sewage therefrom. Having explained the course of the intended outfall sewers, and the site of the pumping station, Mr. Denton proceeds to describe his proposal for dealing with the sewage. His proposals embrace alternative plans for irrigation and for intermittent filtration. By irrigation he means the distribution of the sewage at command over as wide an area of land as it can be possibly applied to, with a view to the production of crops and the purification of the sewage itself. By intermittent filtration he means the distribution of sewage over as small an area of land as will secure its purification, without making the profitable production of vegetation a governing object. He proposes to take 400 acres of land at Chesterton, and 250 acres at Coldhams Common and Fen Ditton. Referring to the cost, Mr. Denton says that if irrigation be adopted, and the maximum quantity of land taken for the purpose, the total outlay, including 400 acres of land, may exceed £70,000. If 100 acres of land are taken and prepared for filtration, adopting four series of filters of 25 acres each, the outlay would probably reach £33,800. It was possible that a greater return would be obtained from the money laid out in irrigation than from filtration, as was the case at Merthyr. Allusion is made to the sluggish nature of the Cam and the pernicious influence of the locks by which the navigation is maintained. If the liquid refuse of the town is to be purified before entering the river, this cannot be done by simple gravitation, but the sewage must be lifted.—*Times.*

## Register of New Patents.

113.—JOHN FLEMING ALLAN, of Glasgow, in the co. of Lanark, North Britain, for "*Improvements in making illuminating gas, and in apparatus therefor.*" Patent dated Jan. 16, 1871.

This invention has for its object the making of illuminating gas in larger quantity, of better quality, and by simpler and more easily managed apparatus than heretofore; and it consists, in the first place, in dispensing with the ordinary hydraulic main, and so removing pressure from the retorts without the aid of gas-exhausters ordinarily used for that purpose.

The invention also comprises a peculiar conjoint and compact arrangement of retort-furnace, tar-separator, and purifier in one self-contained cast-iron casing capable of being made of various sizes, and suitable either for country or other single houses, or for larger establishments.

The retort-furnace consists of a rectangular cast-iron casing lined with fire-brick, and fitted with a gas-restort, by preference of cast iron, which retort does not quite reach the inner end of the casing, so that the fire gases pass up at the inner end, and being led forward along a flue over the top of the retort, enter a chimney or uptake near the front end. The gas passes off from the front end of the retort by a short vertical pipe, the top of which enters a box containing a nicely balanced flap valve, which closes on the retort being opened for charging, and prevents the return of gas. From the valve-box the gas is led by a pipe so as to enter in a downward direction a cast-iron casing constructed at the side of the furnace casing, and acting as a separator of and reservoir for the tarry liquids condensed from the gas. A purifier or vessel for containing any suitable known purifying agent or agents is fitted upon the tar reservoir, and the gas passing up through it is finally led to the gasholder. The apparatus is for making gas from coal or other suitable carbonaceous material.

143.—PETER BROTHERHOOD and GEORGE DOMINICUS KITTOE, both of 56, Compton Street, Clerkenwell, in the co. of Middlesex, engineers, for "*Improvements in apparatus for regulating and measuring the flow of fluids.*" Patent dated Jan. 20, 1871.

These improvements relate to apparatus, such as steam-engine governors, for regulating the flow of steam or other fluids or of liquids according to the velocity that may be desired, and also to apparatus such as gas or water meters for measuring or recording the amount of fluid that passes through a pipe or chanuel in a certain time.

At the point where this apparatus is applied the pipe, or channel, is expanded, and mounted within it is a disc fixed on a spindle, which is axial with the tube, and which passes through a stuffing-box to the exterior. A ring is mounted on two pivots, or bearings, at the edge of the disc, so that it can rotate or oscillate like a gimbal on these pivots, which form an axis for it at right angles to the axis of the tube. The ring is made of such size, that when it lies in the plane of the disc it fills up the annular space between the disc and the tube, without bearing tightly on either of them, and thereby almost entirely closes the passage for fluid. The ring is pressed upon by a spring or weight, so as to make it lie obliquely to the plane of the disc, and thereby to leave a portion of the annular space open for the passage of fluid. The spindle of the disc is caused to revolve rapidly by a pulley and band or other convenient connection with the rotating machinery to which the apparatus is applied. By this rotation the disc and ring are made to revolve and the centrifugal force of the ring causes it to tend to assume a position where it will lie in the plane of the disc in opposition to the spring or weight which presses it towards an oblique position. Thus the faster the ring rotates the more does it assume the position where it closes the passage for fluid, and conversely the more slowly it rotates the greater opening it affords for passage of fluid.

Instead of mounting a ring as above described on pivots on a disc, the latter is sometimes mounted on pivots within a ring or tube like an ordinary throttle valve acted on by a spring or weight so as to keep it in an oblique attitude. On causing the ring or tube to rotate the disc tends to lie with its plane at right angles to the axis of the tube, and so to close the passage through the ring or tube, closing it the more the greater the velocity of its rotation, and conversely.

For measuring as well as regulating the passage of fluid, vanes are fixed on the disc or on its spindle a wheel is fixed with vanes or blades like a turbine. The fluid current acting on these vanes or blades causes the spindle to rotate, and its rotation acting on a suitable counter or register records the number of revolutions in a given time.

Regulating and measuring apparatus such as described may be combined with conoidal or other governing valves, whereby the pressure of the passing fluid is rendered uniform.

151.—JAMES HOSKEN, of 58, Fenchurch Street, in the City of London, engineer, for "*Improvements in automatic apparatus for controlling the flow of liquids from constant supply pipes or vessels.*" Patent dated Jan. 20, 1871.

This invention has for its object improvements in automaton apparatus for controlling the flow of liquids from constant supply pipes or vessels, and relates to the use in combination of a tap or plug, and two suitably guided spindles or plungers, in such manner that the opening of the tap or plug opens a passage, whereby liquid is admitted into a cylindrical chamber beneath a piston or plunger, which, being raised, raises the main valve, and so allows liquid to pass through the apparatus, until the passage, leading to the cylindrical chamber, is closed by the continued rising of the main valve spindle, bringing it in contact with the valve of the small valve spindle, whereupon the two spindles move downwards, until the piston has forced the liquid out of the cylindrical chamber, and thus allowed the main valve to close against its seat.

164.—ALEXANDER KIRK RIDER, of the city of New York, in the State of New York, U.S.A., for "*Improvements in air and gas engines.*" (Complete specification.) Patent dated Jan. 21, 1871.

This invention embraces important improvements in that class of air engines in which two pistons are employed in one cylinder, which performs the double office of air pump and power cylinder. The first part of the invention relates to combining this class of aspirating engine, with an internal furnace, in which the air is heated by passing through, or over the fire. The second part relates to inducing the peculiar motions of the inner or shifting piston by simple mechanism. The third part relates to making the engine reversible. The fourth part relates to more perfectly regulating the speed of the engine under varying conditions of load without waste of fuel by a peculiar valve and passages peculiarly arranged to be controlled thereby, the valve being adapted to be operated by a governor. The fifth part relates to novel means for producing a proper motion of the changing piston. The sixth part relates to the construction of the furnace and the adjacent parts, where the air is heated by a fire maintained outside of the cylinder. The seventh part relates to devices for increasing the power by the aid of a cut-off valve, peculiarly arranged and operated to directly and immediately control the admission of the heated air in the cylinder. The eighth part relates to means for generating ammonia in or about the furnace of an engine, and rendering available the great expansive power of the ammonia at temperatures to drive the engine. The shifting piston has a connecting-rod constructed with an offset, carrying the attachment of the upper link of a cross-head. Two offsets may be placed on opposite sides of the connecting-rod, with or without a connecting slot, for reversing the engine. A valve and connected air passages are constructed, and arranged so as to perform the double function of controlling the fire and of throttling the air. A cut-off valve and seat is used, protected from the action of the heated gas.

166.—CHARLES HUNT, of Nine Elms, in the co. of Surrey, for "*Improvements in apparatus used in the manufacture and distribution of gas.*" Patent dated Jan. 23, 1871.

This invention consists in such an improved arrangement of a throttle-valve as to constitute the apparatus to which it is applied a governor or regulator, the valve being operated upon by means of a gasholder, which is actuated by the pressure of the gas. Instead of fixing the lever or radius arm of the valve on the outside of the chamber on which the valve works, as heretofore, and attaching it to the spindle which carries the disc or throttle, and by which the motion of the lever is communicated, the arm is fixed inside the valve chamber, and by preference upon the disc or throttle. The pipe which ordinarily conveys the outlet gas, or gas which has passed the valve to the gasholder used to operate upon the valve, is in this arrangement placed in the centre of the tank of such gasholder, and is connected to the top of the valve-chamber immediately over the end of the lever or radius arm farthest from the disc or throttle. A rod or chain passing down the pipe connects the lever to the crown of the gasholder in a similar way to that by which the cone of an ordinary gas-governor is suspended. No stuffing-box is required for the spindle, and in some cases it is preferred to substitute for the spindle steel centres, upon which the disc or throttle is accuratcly balanced and turns freely. The governor is adapted both for controlling the amount of exhaust applied in the manufacture, and to regulate the supply of gas to a district.

174.—JOHN PATERSON WATERSON, of Forest Hill, in the co. of Kent, builde for "*Improvements in or applicable to hot water apparatus, also applicable to water-pipes.*" Provisional protection only obtained. Dated Jan. 23, 1871.

To carry out the invention a vertical iron vessel is employed, from the upper part of which a pipe passes to connect it with the up-pipe of the hot water apparatus, or cold water cistern, the lower part of the said vessel being connected to the same pipe of the hot water apparatus or cistern in a similar manner. In the centre of the vessel is placed a pipe open at its ends, and at the bottom of this pipe is placed a gas-burner or a small lamp.

184.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in meters for measuring liquids.*" A communication. Patent dated Jan. 24, 1871.

These improvements are more particularly designed to be applied to water meters, and will here be described accordingly, but the same are equally applicable to meters for measuring other liquids or fluids.

The invention while here described in connection with a meter provided with a swinging piston hung to vibrate about a vertical axis is not restricted to this or any other particular kind of meter or piston used therein or diaphragm operating as a pistou. The piston or diaphragm may either be rigid or elastic, and may be arranged to reciprocate either in a straight line or in a curvilinear direction.

The meter may also be constructed either as a single or double piston meter; but when a double piston is used it is desirable to have the valve which controls the operation of either one piston operated by the other or adjacent piston.

The first improvement consists of a valve of peculiar construction for controlling the movement of the diaphragm or piston. This valve is of cylindrical contour, and receives the liquid at one end and discharges it at the other, and is provided with alternately disposed or otherwise equivalently arranged inlets and outlets in its sides for operation in relation to ports or passages in the valve seat or cylinder; so that while the movement of the valve in direction of the length of its axis does not change the course of the fluid, the simultaneous turning of the valve about its axis reverses the flow through the ports of the valve seat or cylinder. These ports (and those constituting the inlets and outlets in the sides of the valve) are preferably so constructed or elongated in relation with each other that the movement of the valve in direction of the length of its axis does not reduce or change the condition of the ports.

The invention also includes a valve constructed and operated in such manner that it is lifted by the moving diaphragm or piston of the meter, and made to drop and turn independently of the latter to reverse the reciprocating action of the diaphragm or piston. The valve drops by its own weight, or in part by weight and in part by the pressure of the incoming fluid, or either.

The invention likewise includes a balanced or partly balanced construction of free or independent valve, whereby it is relieved of a portion of the pressure derived from the incoming fluid, thereby facilitating the lift of it, and easing its drop when falling.

The invention furthermore comprises a combination with the valve (whether balanced or not) of a vibrating hollow cam formed with reverse inclines, and set in motion by the piston of the meter, also a cross bar or piece connected with the valve, and suitable stop to effect the lift of the valve in a straight line or course, and to insure its turning when dropping.

The operating devices for actuating the valve consists of a pinion on a swinging piston, meter shaft, and a toothed sector on the vibrating cam hereinbefore referred to. A valve constructed to operate as described is capable of being rapidly reversed to effect the change in the motion of the piston, and when combined with a suitable arrangement of ports which it controls serves to ensure a free supply and discharge being kept up without intermission of the stream.

185.—CHARLES RITCHIE, of Brixton, in the co. of Surrey, gentleman, for "*Improvements in apparatus for utilizing heat for heating, warming and ventilating, cooking, lighting, and sanitary purposes.*" Provisional protection only obtained. Dated Jan. 24, 1871.

A stove has air-passages through it, and the heated products are conveyed in a zig-zag or serpentine manner through passages surrounding the air-passages. Flues for discharge of products may be dispensed with, a fresh air-pipe for support of combustion being used. Or a chamber for treating injurious products of combustion may be added to a short flue belonging to the stove. A syphon arrangement for drawing the flame and products of a burner downwards, and bringing the heat through a stove and up the syphon shaft, is described. Various details applicable to stoves, ventilating, and lighting are described in this provisional specification, which refers to patents No. 2674, 1867, and No. 265, 1868.

188.—JOSEPH BLACKMORE, of Manchester, in the co. of Lancaster, builder, for "*Improvements in the construction of cisterns.*" Patent dated Jan. 25, 1871.

It has heretofore been customary to make cisterns of lead, iron, or slate. This invention consists in making them of glazed earthenware, which reduces the cost, and is more durable and cleanly than those now in use.

200.—CHARLES EDMUND WEBBER, of Cornwall Gardens, Kensington, in the co. of Middlesex, captain in the Royal Engineers, for "*Improved means of forcing air or gas through tubes.*" Provisional protection only obtained. Dated Jan. 25, 1871.

This relates to the employment of a jet or jets of steam or air within a tube or pipe as a mover of the air therein for pneumatic purposes.

201.—ROBERT PORTER and THOMAS LANE, both of 172, Fenchurch Street, in the City of London, engineers, for "*Improvements in the manufacture of gas for illumination, and in the apparatus connected therewith.*" Patent dated Jan. 25, 1871.

These improvements consist in producing gas from liquid hydrocarbons by means of a tapered vertical retort, in which are suspended at intervals several discs, slightly less in diameter than the inside of the retort, to force the vapours against the heated surface of the retort, and make them into fixed gas. Water or steam is introduced into the retort to prevent carbonaceous deposit. The flow of the liquid to the inside of the retort is regulated by the admission of air into an hermetically closed vessel except at the outlet, whereby the uncertainty of taps is avoided.

Also for producing gas from coal or other solid materials by means of a tapered vertical retort, with a worm running from top to bottom slightly less in diameter than the inside of the retort, with a closed hopper on the top to hold the charge, and a closed receptacle to receive the exhausted charge. A horizontal pipe, or trough condenser, is used, in which the gas is made to pass along over water; and in some instances water is placed in the top of the trough as well as inside, to assist condensation. A purifier for the ordinary processes is used, in which the luting-joint for the cover is formed by an angular or slightly O G form of bent plate-iron, by which means much costly work is avoided in manufacturing it. A furnace is used, in which a space of dead brick surface, on a level with the bars, runs round the grate between the bars and the furnace walls, to prevent air from passing up the walls and giving undue oxidation to the retort, and to prevent clinkers on the furnace walls. Also a combustion-chamber is formed in the crown of the furnace by building the top of the flues leading out of the furnace below the springing of the arch.

221.—ROBERT BOYLE, of Glasgow, in the co. of Lanark, N.B., for "*Improvements in ventilators and smoke extractors.*" Provisional protection only obtained. Dated Jan. 27, 1871.

One modification of ventilator consists of a vertical duct or shaft, having its upper external part divided by radiating vertical plates, forming separate passages, which are formed with expanding mouths facing horizontally. The shaft may be fitted with one or more branch pipes, to lead portions of the air to different parts; but it is also continued downwards, and finally led outwards, its bottom end being fitted with a light valve, which, on gusts of wind passing down, will open, and thus prevent the gusts passing along the branch pipes.

In a second modification of ventilator, which acts by extracting heated or foul air, and which is also applicable as an efficacious smoke extractor for chimneys, there is a vertical shaft, having at its upper end an annular conical rim, surmounted by a number of radiating vertical division-plates (by preference eight or six), and covered by a cap.

In a third modification, suitable as a smoke extractor or as an extractor ventilator, a series of inverted conical rims are fixed at the top of the shaft, and the smoke or foul air is free to pass out between them, as well as at a central opening at the apex. The cones are surrounded at a little distance by an external shell open at the top, and formed with curved inlet mouths at the bottom, divided by radiating vertical plates.

In a fourth modification, a vertical shaft has formed round its upper end a series of four or more helical or spiral passages, with enlarged mouths at their lower ends for the entrance of external air currents, and with nozzles at their upper ends entering the sides of the shaft.

229.—JOSIAH GEORGE JENNINGS, of Palace Road, Lambeth, sanitary engineer, for "*Improvements in the construction of sinks, cisterns, water-closets, and urinals, and in the means of supplying the same with water, and in trapping pipes, drains, and gullies in connexion therewith.*" Patent dated Jan. 28, 1871.

These improvements include the combination of a slop-sink with an ordinary sink, and the construction of sinks, cisterns, and such like, with galvanized iron bottoms, and sides and ends of slates or other suitable material. To prevent waste in the supply of water to sinks, urinals, water-closets, and such like, a measuring-chamber is employed, and is put in connexion with the supply-cistern. The inlet and outlet of the measuring-chamber are fitted with valves, connected by loose joints to the opposite end of a lever, so that one shall be closed when the other is opened, and there is a syphon arrangement in connexion with the outlet-valve by which, when the outlet-valve has once been opened, and water allowed to pass to the outlet-pipe, the measuring-chamber is emptied, even though the outlet-valve be again closed. An arrangement for controlling the supply of water to cisterns is also described. The pan of a water-closet is formed of a pear-shape, with the ends higher than the sides, and curved over inwards; also with broad surfaces at the two sides, either for the feet or to form a seat. The basins of urinals are formed with a syphon discharge-pipe in place of the discharge orifice at the bottom, as usual. Also forming traps in connexion with drains, and such like, with a valve-seat below the outfall, and a ball-valve to work with such a seat; where the traps are subject to tidal influences or storm waters, they are formed with two seats, with a ball or balls between them.

249.—WILLIAM MORRIS the younger, of Kent Water-Works, Deptford, in the co. of Kent, engineer, and GEORGE ESKHOLME, of Rotherham, in the co. of York, engineer, for "*Improvements in apparatus for regulating and controlling the supply of water for domestic and other purposes.*" Provisional protection only obtained. Dated Jan. 30, 1871.

This invention consists, firstly, in the use of a moveable seat in lieu of a fixed one, in the ball-taps employed in connexion with the waste-preventing service-boxes of water-closets, &c., in order to reduce the liability to injury of the seating of such ball-taps. Secondly, in the combination of a sliding discharge-pipe with a cylinder or water-box containing a moveable valve-seat resting on the discharge-pipe, so arranged that on the withdrawing of the latter from the former a given time will elapse before the seat, by its descent, will close the discharge-pipe again, thereby not only preventing continuous waste, but further ensuring the delivery of a regulated quantity of water. This is applicable to water-closets, stand-ports, and other like purposes. Thirdly, in the use of a supplementary service-box situated between the supply-cock and the basin for the pupose of ensuring the delivery of a proper amount of water into the cistern after the cock has been shut, in order to properly trap the closet.

270.—LEOPOLD MILES GREEN the elder, of Southsea, in the co. of Hants, engineer and millwright, for "*An improved joint for pipes or for other purposes where such joints are required.*" Provisional protection only obtained. Dated Feb. 1, 1871.

The object of this invention is to provide a ready and effectual means of joining or connecting flanged pipes, and consists, in pipes where pressure is from the inside, in placing between the faces of the adjoining pipes two rings, the outer one of metal, and the inner one of leather or suitable elastic composition, and in then bolting the flanges together, thus compressing the elastic ring and forming a very efficient joint. The inside pressure of the water or other medium forces the leather ring outwards and against the metal holding ring, making the joint still more secure. In pipes where the pressure is from the outside the position of the two rings is transposed, the elastic ring (which is slightly the thicker) being placed outside. When the pipes are connected by the bolts the elastic ring will be compressed, and thereby form a secure joint, the outside pressure of the air or other medium will force it against the inner metal ring, and so make the joint in every way effectual.

291.—RICHARD HUGH HUGHES, of Hatton Garden, in the co. of Middlesex, for "*Improvements in gas-regulators.*" Provisional protection only obtained. Dated Feb. 2, 1871.

For the purpose of this invention a beam is employed, mounted on a centre of motion. At one end of this lever a bell or gas receiver is connected, open at the bottom, and at the other end a valve is fixed. The bell works in a chamber filled up to a given level with water. Into the interior of this bell, above the level of the water, a comparatively small pipe is led from the main, and into another chamber the main is conducted, and the end thereof formed into a valve-seat, with which the valve is capable of acting. The supply-pipe is fixed to this last-mentioned chamber.

297.—PROCTER SHERWIN, of 5, the Parade, Exmouth, in the co. of Devon, civil engineer, and JOHN MAULE SUTTON, of Dartmouth, in the said co., doctor of medicine, and member of the Royal College of Physicians of England, for "*Improvements in the treatment of sewage matters.*" Patent dated Feb. 3, 1871.

The improvements in the treatment of sewage matters relate to the application of self-acting means for the purpose of regulating the flow of certain matters to such sewage to prevent effluvium; also to the separation of the more solid from the liquid parts by filtration; also to the manufacture of the more solid parts into manure and the use of a portion of the liquid for irrigation, the other being subjected to further purification. In carrying the improvements into effect, the chemicals used (carbolic acid or other suitable materials) are placed in a tank or reservoir, over or in communication with the sewer, so that the chemicals in a fluid state may be permitted to flow in amongst the sewage matters, by preference in jets or fine streams, capable of being regulated in quantity to the strength of the chemical employed, or the quantity of the sewage matter for the time flowing through the sewer, the regulation being by a ball or float.

The sewage matters are then conducted into reservoirs provided with perforated conduits connected with other reservoirs or tanks. These are covered or surrounded by a layer or layers of matter composed of stone, gravel, sand, charcoal, or other suitable substances, adapted by filtration to separate the solid from the liquid portions of the sewage.

The solid parts thus left behind are removed at intervals, to be dried by the aid of steam, hot water, hot air pipes, or by flues or furnaces, or by currents of hot or cold air, and when dried to the extent desired the more solid portion is screened, ground, and mixed with charcoal, soot, or other forms of carbon, loam, lime, mixed mud, or other subsoils for manure, or, if desired, in its crude state.

The more liquid portion of the sewage matters after the filtration is conducted into a suitable receiver, or a series of them, thence to be conveyed by suitable channels and pumping apparatus to land for irrigation. Any excess of this liquid sewage or effluent water may be subject to successive filtration, such as referred to, until it is sufficiently purified to be allowed to flow into a river or the sea.

298.—WILLIAM WALKER, of Manchester, in the co. of Lancaster, for "*Improvements in the construction of steam-pumps.*" Provisional protection only obtained. Dated Feb. 3, 1871.

This invention relates to steam-pumps, and consists principally of an arrangement of apparatus, whereby the piston of the steam cylinder acting at each end of its stroke against a pin fixed in a cored piston valve, and projecting into the cylinder, causes the said valve to slide in one direction or the other, and thus admit steam behind a solid piston fixed on the end of the spindle which carries the slide valve, and this steam acting against the solid piston, changes the position of the slide-valve immediately, and thus effects the return stroke of the steam piston, which then comes in contact with the other pin, and reverses the operation.

329.—BEVAN GEORGE SLOPER, of Northfleet, in the co. of Kent, chemical engineer, and FELIX JEAN JOSEPH WASHER, of Brussels, in the kingdom of Belgium, industrial engineer, for "*Improvements in the treatment of sewage and other fæcal matters.*" Patent dated Feb. 8, 1871.

These improvements consist in mixing with the sewage, or other fœcal matter, a sufficient quantity of an alkali or alkaline earth to decompose the nitrogenous substances, and effect their conversion into ammonia, and into a carbonate of the alkali or alkaline earth. Solutions of a soluble salt of magnesia and of a soluble posphate are then mixed with the sewage.

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## APPLICATIONS FOR LETTERS PATENT.

3130.—STEPHEN HENRY EMMENS, of 2, Gresham Buildings, in the City of London, scientific referee, for "*Improvements in purifying distillates from carbonaceous or bituminous substances.*" Nov. 18, 1871.

3153.—JOHN HENRY JOHNSON, of 47, Lincoln's Inn Fields, in the co. of Middlesex, gentleman, for "*Improvements in combined apparatus for the filtration and distribution of water.*" Nov. 21, 1871.

3156.—JAMES BLICK, of 17, St. Paul's Road, Camden Town, in the co. of Middlesex, for "*An improved apparatus for impregnating atmospheric air with hydrocarbon vapours for heating and lighting purposes.*" Nov. 22, 1871.

3189.—Charles Denton Abel, of 20, Southampton Buildings, Chancery Lane, in the co. of Middlesex, patent agent, for "*Improvements in rotary or centrifugal pumps.*" A communication. Nov. 24, 1871.

3233.—François Jules Fahlmann, of Stockholm, in the kingdom of Sweden, for "*Disinfecting and collecting fœcal matters, sewage, and manufacturing refuse.*" Nov. 29, 1871.

3242.—William Goddard Lankester, of the town and co. of Southampton, ironfounder, for "*Improvements in heating and ventilating houses and other buildings.*" Nov. 30, 1871.

## GRANTS OF PROVISIONAL PROTECTION.

2606.—William Thomas Walker, of 7, Holly Terrace, Highgate, in the co. of Middlesex, for "*Improvements in apparatus used in gas-works for cleansing and purifying gas from ammonia and other impurities.*" Oct. 3, 1871.

2829.—Charles Wedderburn Granville, late of Mansfield Chambers, St. Ann's Square, Manchester, but now of Arundel Street, Strand, in the co. of Middlesex, merchant, for "*An improved asphalte pavement and method of forming the surface of such pavements to prevent the slipping of horses thereon.*" Oct. 23, 1871.

2903.—Frederick Ludewig Hahn Danchell, of Horwich, in the co. of Lancaster, civil engineer, for "*An improved disinfectant.*" Oct. 30, 1871.

3015.—Joseph Ellicott Holmes, of Buckingham Street, Strand, in the co. of Middlesex, civil and mechanical engineer, for "*An improved asphalte compound and apparatus employed in the manufacture of the same, chiefly designed for paving streets.*" Nov. 8, 1871.

3019.—Edward Barnes, of High Holborn, in the co. of Middlesex, engineer, for "*Improvements in gas-furnaces.*" Nov. 9, 1871.

3023.—Peter Gent, of New Brighton, in the co. of Chester, for "*An improved portable gas-oven for culinery purposes.*" Nov. 9, 1871.

3045.—Bristow Hunt, of 1, Serle Street, Lincoln's Inn, in the co. of Middlesex, gentleman, for "*Improvements in water-meters.*" A communication. Nov. 10, 1871.

3070.—Alexander M'Callum Gordon, of Liverpool, in the co. of Lancaster, soft metal pipe manufacturer, for "*Improvements in the manufacture of soft metal pipes, and in apparatus or appliances employed therein.*" Nov. 14, 1871.

3085.—Henry Augustus Tilden, of New Lebanon, in the state of New York, U.S.A., for "*An improved compound for disinfecting and deodorizing.*" Nov. 15, 1871.

3090.—Samuel Smith, of Aston, near Birmingham, in the co. of Warwick, gentleman, for "*Improvements in sliding gas-chandeliers or gaseliers, and other sliding gas-lamps.*" Nov. 15, 1871.

3153.—John Henry Johnson, of 47, Lincoln's Inn Fields, in the co. of Middlesex, gentleman, for "*Improvements in combined apparatus for the filtration and distribution of water.*" A communication. Nov. 21, 1871.

3156.—James Blick, of 17, St. Paul's Road, CamdenTown, in the co. of Middlesex, for "*An improved apparatus for impregnating atmospheric air with hydrocarbon vapours for heating and lighting purposes.*" Nov. 22, 1871.

## NOTICES TO PROCEED.

1804.—William Hollinshead, of Peckham, in the co. of Surrey, for "*Improvements in the method of and apparatus for lighting railway carriages with gas.*" July 11, 1871.

1829.—John Joseph Franks, of Stroud, in the co. of Gloucester, civil engineer, for "*Improvements in the mode of flushing as applied to urinals and water-closets.*" July 12, 1871.

1845.—Frederick Philip Preston, John Theodore Prestige, Edwin James Preston, and William Alfred Prestige, trading under the firm of Josiah Stone and Company, of High Street, Deptford, in the co. of Kent, engineers, for "*Improvements in waste-water preventer taps, so that they shall act without the use of plug-cocks.*" July 14, 1871.

1937.—Frederick Philip Preston, John Theodore Prestige, Edwin James Preston, and William Alfred Prestige, trading under the firm of Josiah Stone and Company, of High Street, Deptford, in the co. of Kent, engineers, for "*Improvements in waste-water preventer cisterns.*" July 22, 1871.

2497.—John Williamson, of 25, Warren Street, Stockport, in the co. of Chester, and William Glazier, of 285, Duke Street, Rochdale, in the co. of Lancaster, for "*Improvements in dry closets or privies and commodes, and in apparatus to be used therewith.*" Sept. 22, 1871.

2755.—Alexander Mann, of 107, Holley Street, Dalston, in the co. of Middlesex, for "*Improvements in taps or valves.*" Oct. 17, 1871.

2829.—Charles Wedderburn Granville, late of Mansfield Chambers, St. Ann's Square, Manchester, but now of Arundel Street, Strand, in the co. of Middlesex, merchant, for "*An improved asphalte pavement, and method of forming the surface of such pavements to prevent the slipping of horses thereon.*" Oct. 23, 1871.

2832.—Peter Spence, of Newton Heath, Manchester, in the co. of Lancaster, manufacturing chemist, for "*Improvements in the treatment of oxide of iron which has been used in the purification of illuminating gas, for the purpose of again making it available for that process, and also for the manufacture of sulphate and muriate of iron.*" Oct. 23, 1871.

2926.—Adolphe Pierre Vassard, of New Cross, in the co. of Kent, chemist, for "*Improvements in treating liquid sewage and other ammoniacal liquors.*" Nov. 1, 1871.

2975.—Job Cole, of Promenade Garden, Sutton Coldfield, in the co. of Warwick, and William Abbott, of Birchfield, in the co. of Stafford, brassfounder, for "*Improvements in treating and utilizing sewage and other refuse matter, and in apparatus to be used for this purpose.*" Nov. 4, 1871.

2990.—George Henry Ellis, of 20, High Holborn, in the co. of Middlesex, engineer, for "*A new mode of treating the surfaces of asphalte roads and pavements for the purpose of preventing slipping.*" Nov. 7, 1871.

3045.—Bristow Hunt, of 1, Serle Street, Lincoln's Inn, in the co. of Middlesex, gentleman, for "*Improvements in water-meters.*" A communication. Nov. 10, 1871.

3085.—Henry Augustus Tilden, of New Lebanon, in the state of New York, U.S.A., for "*An improved compound for disinfecting and deodorizing.*" Nov. 15, 1871.

## PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

3457.—Charles Jones, "*Improvements in the treatment of sewage.*" Nov. 13, 1868.

3464.—Robert Beckley and James Joseph Hicks, "*Improvements in means or apparatus for measuring and registering the quantities of flowing liquids, which invention may be used as a rain-gauge or as a liquid-meter, and for measuring the strength of liquor run off from a still or other apparatus or vessel.*" Nov. 14, 1868.

3506.—Arthur M'Dougall, "*Improvements in the manufacture of phosphatic manures and sulphate of ammonia.*" Nov. 18, 1868.

3541.—Clinton Edgcumbe Brooman, "*Improvements in the manufacture of gas for lighting and heating, and in apparatus employed therein.*" Nov. 21, 1868.

3581.—George Bernhardt, "*Improvements in arrangements and apparatus for regulating and economizing the supply of gas in mills and manufactories.*" Nov. 25, 1868.

# Share List of Metropolitan Gas Companies.

| Number of Shares issued. | Amount per Share. | Name of Company. | Amount paid up p. Share. | Dividend p. Cent. p. Annum. | Latest Quotations. |
|---|---|---|---|---|---|
| | £ | | £ s. d. | £ s. d. | £ |
| 8000 | 20 | Anglo-Romano | 20 0 0 | 10 0 0 | 20 — 22 |
| 5000 | 20 | Bahia (Limited) | 20 0 0 | 3 0 0 | 12½ — 13½ |
| 1000 | 20 | Do., preference | 20 0 0 | 10 0 0 | 23 — 25 |
| 750 | 20 | Do., do., redeemable | 20 0 0 | 10 0 0 | 21 — 23 |
| 40000 | 5 | Bombay (Limited) | 5 0 0 | 6 15 0 | 6¾ — 7¼ |
| 10000 | 5 | Do., third issue | 4 0 0 | 6 15 0 | 1¼—1½ pm. |
| 10000 | 20 | British (Limited) (Norwich, Hull-Sculcoates, Hanley, Tunstall & Shelton [Potteries], Trowbridge., and Holywell.) | 20 0 0 | 10 0 0 | 34 — 35 |
| 7500 | 20 | Cagliari (Limited) | 20 0 0 | 7 0 0 | 20 — 21 |
| 112000 | 10 | *Chartered* | 10 0 0 | 8 0 0 | 16½ — 17 |
| 10000 | 10 | Do., B shares, 4 per cent. max. | 10 0 0 | 4 0 0 | 7½ — 8 |
| 25000 | 10 | Do., 5 per cent. preference | 10 0 0 | 5 0 0 | 13½ — 14½ |
| 20000 | 10 | Do., 5 per cent. preference, second issue | 8 0 0 | 5 0 0 | 3½—3¾pm. |
| 20000 | 10 | Do., 10 per cent. preference | 10 0 0 | 10 0 0 | 19½ — 20½ |
| 17490 | 25 | *Commercial* | 25 0 0 | 10 0 0 | 43½ — 44½ |
| 20000 | 20 | Continental Union | 20 0 0 | 8 0 0 | 25½ — 26½ |
| 10000 | 20 | Do., new | 7 10 0 | 8 0 0 | 3 —3¼ pm. |
| 5213 | 20 | Do., preference (Grmny.: Strsbg. France: Cette, Nismes, Montargis Vienne, Roanne, Beaucaire, Rueil, Albi. Italy: Milan, Genoa, Parma, Modena, Alessandria, Messina.) | 20 0 0 | 7 0 0 | 25 — 27 |
| 5000 | 10 | *Crystal Palace District* | 10 0 0 | 10 0 0 | 17½ — 17¾ |
| 5000 | 10 | Do., preference | 10 0 0 | 6 0 0 | 11½ — 12 |
| 6044 | 10 | Do., new shares | 10 0 0 | 7 0 0 | 13½ — 14 |
| 3956 | 10 | Do. | 1 0 0 | 7 0 0 | 1½—1¾ pm. |
| 23406 | 10 | European (Limited) | 10 0 0 | 11 0 0 | 16 — 16½ |
| 12000 | 10 | Do., new shares (Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.) | 5 0 0 | 11 0 0 | 3¼—3½pm. |
| 5000 | 10 | Hong Kong (Limited) | 10 0 0 | 10 0 0 | 13½ — 14½ |
| 1560000 | 100 | *Imperial* | 100 0 0 | 10 0 0 | 172 —174 |
| 26000 | 12½ | Do., new shares | 12 10 0 | 7 0 0 | 16¼ — 16¾ |
| 25000 | 12½ | Do., new shares, 1870 | *7 10 0 | 7 0 0 | 2¾ — 3¼ pm. |
| 1300 | 100 | Do., bonds | £100 | 10 0 0 | 190 —195 |
| 56000 | 50 | *Imperial Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam, Aix-la-Chapelle, Antwerp, Bordeaux, Brussels, Cologne, Frankfort-on-Maine, Haarlem, Stolberg, Toulouse, & Vienna.) | 43 15 0 | 9 2 6 | 71 — 73 |
| 400 | 100 | Imperial Mexican (Limited) | 100 * 0 | nil. | |
| 200 | 100 | Do., new | 100 0 0 | nil. | |
| 3000 | 40 | *Independent* | 40 0 0 | 10 0 0 | 68 — 70 |
| 3000 | 10 | Do. | 10 0 0 | 5 0 0 | 8 — 9 |
| 3000 | 20 | Do. | 20 0 0 | 7 10 0 | 4 —5 pm. |
| 250000 | 8k. | *London* | 100 0 0 | 10 0 0 | 171 —173 |
| 24000 | 8k. | Do., 1st preference | 100 0 0 | 6 0 0 | 120 —125 |
| | 8k. | Do., 2nd preference | 100 0 0 | 6 0 0 | |
| | 8k. | Do., 3rd preference | 100 0 0 | 6 0 0 | |
| £18781 | 100 | Do., 1st preference stock | 100 0 0 | 6 0 0 | 121 —123 |
| £11828 | 100 | Do., 2nd preference stock | 100 0 0 | 5 0 0 | 103 —105 |
| 15000 | 5 | Nictheroy, Brazil (Limited) Malta and Mediterranean (Limited) | 5 0 0 | 5 0 0 | 3½ — 4¼ |
| 6000 | 5 | Do., preference | 5 0 0 | 7 0 0 | 5¾ — 5½ |
| 20000 | 5 | Mauritius (Limited) | 2 0 0 | 6 0 0 | 2½ — 2¾ |
| 30000 | 5 | Oriental (Calcutta) | 5 0 0 | 9 0 0 | 7½ — 8 |
| 30000 | 5 | Do., new shares | 2 10 0 | 9 0 0 | 1½—1¾ pm. |
| 10000 | 5 | Ottoman (Limited) | 5 0 0 | nil. | 2 — 2½ |
| 14000 | 10 | Pará (Limited) | 10 0 0 | 8 0 0 | 10½ — 11½ |
| 27000 | 20 | *Phœnix* | 20 0 0 | 10 0 0 | 34 — 35 |
| 3600 | 100 | Do., new | 45 0 0 | 7 10 0 | 18—20 pm. |
| 144000 | 8k. | Do. | 100 0 0 | 5 0 0 | 89 — 91 |
| 5000 | 20 | *Ratcliff* | 20 0 0 | 10 0 0 | 33 — 35 |
| | 20 | Rio de Janeiro (Limited) | 20 0 0 | 10 0 0 | 31 — 33 |
| 6959 | 5 | Singapore (Limited) | 5 0 0 | 6 0 0 | |
| 2000 | 5 | Do., preference | 5 0 0 | 7 10 0 | |
| 1500 | 32½ | Shanghai | 32 10 0 | 12 0 0 | |
| 4000 | 50 | *South Metropolitan* | 50 0 0 | 10 0 0 | 89 — 91 |
| 4000 | 12½ | Do. | 12 10 0 | 10 0 0 | 21½ — 22½ |
| 20000 | 12½ | Do., new shares | 2 10 0 | 10 0 0 | 5 — 5½ |
| 15000 | 10 | *Surrey Consumers* | 10 0 0 | 10 0 0 | 17-18 ex div |
| 10000 | 10 | Do., new | 6 0 0 | 10 0 0 | 5—6 ex div |
| 9000 | 4 | United General (Limerick) | 4 0 0 | 5 0 0 | 2½ — 2¾ |
| 1500 | 10 | *Wandsworth and Putney* | 10 0 0 | 10 0 0 | 13 — 14. |
| 1500 | 10 | Do. | 10 0 0 | 7 10 0 | 7½ — 8 |
| 1819 | 10 | Do. | 10 0 0 | 7 10 0 | |
| 1138 | 10 | Do. | 5 0 0 | 7 10 0 | |
| 20000 | 10 | Western (Limited) A shares | 10 0 0 | 10 0 0 | 16½ — 17½ |
| 10000 | 10 | Do., B shares | 9 0 0 | 10 0 0 | 6½—7½ pm. |
| 10000 | 10 | Do., C shares | 9 0 0 | 10 0 0 | 6½—7½ pm. |
| 20000 | 10 | Do., D shares | 1 0 0 | 10 0 0 | 3½—3¾ pm. |
| 16000 | 5 | *West Ham* | 5 0 0 | 8 0 0 | 6½ — 7 |
| 10000 | 5 | Do., new shares | 1 0 0 | 8 0 0 | 1¼ — 1½ |
| 551 | 10 | West London Junction (Limited) | 10 0 0 | 6 0 0 | |
| 520 | 10 | Do., preference | 10 0 0 | 6 0 0 | |

* Call of £2 10s. per share just paid.]

# Price Current.

CASTINGS.—*Per Ton.*

*Average Weight of Cast-iron Gas-pipes, per Yard.*

| 1 in. | 2 in. | 2½ in. | 3 in. | 4 in. | 5 in. | 6 in. | 7 in. | 8 in. | 9 in. | 10 in. | 12 in. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 21 | 28 | 33 | 51 | 70 | 89 | 107 | 126 | 149 | 177 | 206 lb. |

| Retail Prices are 5 to 10 per cent. higher. | London. | Glasgow. | Newcastle and Middlesboro'. | Wales. | Yorkshire, Derbyshire, and Staffordshire |
|---|---|---|---|---|---|
| | £. s. d. | £. s. d. | £. s. d. | £. s. d. | £. s. d. |
| Pig Iron, No. 1 (g.m.b.) | 4 10 0 | 3 11 0 | 3 15 0 | 4 0 0 | 4 0 0 |
| 1¼ and 2-inch Socket-pipes | 7 12 6 | 6 12 6 | 6 10 0 | 6 17 6 | 7 2 6 |
| 2½ and 3-inch ditto | 6 17 6 | 5 17 6 | 5 10 0 | 5 17 6 | 6 2 6 |
| 4 and 5-inch ditto | 6 12 6 | 5 12 6 | 5 7 6 | 5 15 0 | 6 0 0 |
| 6 inches and upwards ditto | 6 7 6 | 5 7 6 | 5 2 6 | 5 10 0 | 5 17 6 |
| Retorts, 1st fusion, hot blast | 6 2 6 | 5 2 6 | 4 17 6 | 5 12 6 | 6 2 6 |
| Ditto, 2nd ditto, cold ditto | 7 2 6 | 6 2 6 | 5 17 6 | 6 12 6 | 7 2 6 |
| Tank-plates, ¼ thick and above | 6 12 6 | 5 12 6 | 5 7 6 | 6 2 6 | 6 12 6 |

## GAS COALS.

| | Per Ton |
|---|---|
| *Newcastle—Unscreened:—* | *s. d.* |
| Haswells, Nettlesworth Primrose, and South Pelaw | 7 6 |
| Felling, Pramwell Gate, North Pelton, Redheugh Main, Walker's Primrose, West Wear, and Whitwell Primrose | 7 6 |
| Burnhope, Craghead, Charlaw, Derwent, East Castle, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, Seaham, South Moor Pelton, South Leverson, Townley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton | 7 0 |
| Pearth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton | 7 3 |
| Brancepeth, Dean's Primrose, Londonderry Gas, New Pelton, Pelton, South Pearth, Stella, Urpeth, Washington Hutton, and West Leverson | 7 6 |
| *Ramsay's Newcastle Cannel* | 17 6 |
| *Wigan Cannel* (at Liverpool) | 17 0 |

| *Scotch Cannel*, f.o.b.:— | Per Ton. | *Scotch Cannel*, f.o.b.:— | Per Ton. |
|---|---|---|---|
| | *s. d.* | | *s. d.* |
| Boghead—at Bo'ness, 47s. 6d.; at Leith | 49s. 2d | Arniston (at Leith) | 21s. 0d |
| Muirkirk | 27 0 | Wemyss (at Wemyss) | 20 0 |
| Kirkness, best (at Burntisland) | 22 6 | Haywood Co.'s Haywood (at Granton) | 21 0 |
| Capeldrae, 1st quality (at ditto) | 22 6 | Pirnie, or Methill | 17 0 |
| Ditto, 2nd ditto (at ditto) | 17 6 | Lothian's Cannel (at Leith) | 24 6 |
| Cowdenbeath (at ditto) | 12 0 | Grange ditto (at Bridgeness) | 17 6 |
| Lochgelly (at ditto) | 12 0 | Kinniel ditto, at Bo'ness | 17 6 |
| Donnibristle—at Burntisland, 12s.; at Aberdour | 12 6 | Myles' ditto | 23 6 |
| Auchinheath Lesmahago (at Granton) | 27 0 | Lochore Parrot (at Burntisland) | 25 0 |
| Duke of Hamilton's Lesmahago (at Granton) | 27 0 | Waverley Seam (at do.) | 16 0 |
| | | Lanemark (at Glasgow) | 16 0 |
| | | Elphinstone Tower (at Leith) | 20 0 |

## FREIGHTS.

| *Coastwise—Newcastle:—* | Per Ton. | *Foreign.—* | Per Keel. |
|---|---|---|---|
| | *s. d.* | | *£ s.* |
| Chatham and Rochester | 6s. 9d. to 7s. 6d | Barcelona | £20 15s |
| Cork | 8 3 | Bordeaux | 10 0 |
| Dover, Folkestone, & Ramsgate | 7s. 6d. to 7 9 | Boulogne and Calais | 8 10 |
| Dublin | 8 6 | Cadiz | £13 to 13 10 |
| Exeter Quay | 9 0 | Cronstadt | 19 15 |
| Ipswich | 6 9 | Copenhagen | £10 to 10 15 |
| London (from Leith) | — | Genoa | 18 5 |
| London (Pool) | 6s. 9d. to 7 0 | Hamburg | 11 0 |
| Lowestoft and Yarmouth | 5 9 | Havre de Grace | 10 0 |
| Portsmouth & Southampton | 9 6 | Leghorn | £18 10s. to 19 0 |
| Plymouth | 10 0 | Lisbon | £11 10s. to 12 0 |
| Shoreham | 8 0 | Rotterdam | £12 10s. to 13 0 |
| Whitstable | 8 0 | Stettin | 13 0 |
| Weymouth | 8 3 | Trieste | 18 10 |
| | | Venice | 21 10 |

## WROUGHT-IRON TUBING,

*Subject to 60 per cent. Discount.*

| | 2 in. | 1½ in. | 1¼ in. | 1 in. | ¾ in. | ½ in. |
|---|---|---|---|---|---|---|
| | *s. d.* | *s. d.* | *s. d.* | *s. d.* | *s. d.* | *s. d.* |
| Patent Welded Tubes, from 2 to 14 feet—per foot | 1 9 | 1 2 | 0 11 | 0 8 | 0 6 | 0 4½ |
| Ditto ditto, from 12 in. to 22½ in.—each | 3 0 | 2 0 | 1 8 | 1 4 | 1 0 | 0 9 |
| Long Screws, from 12 in. upwards | 4 0 | 2 6 | 2 0 | 1 6 | 1 2 | 0 11 |
| Bends and Springs | 4 3 | 2 3 | 1 9 | 1 3 | 0 11 | 0 8 |
| Square Elbows, equal or reducing; Round Elbows, 5 per cent. extra | 3 6 | 2 3 | 1 9 | 1 2 | 0 10 | 0 8 |
| Tees, wrought or cast | 3 9 | 2 6 | 1 9 | 1 5 | 1 0 | 0 9 |
| Crosses, ditto, equal or reducing | 5 3 | 3 6 | 3 0 | 2 3 | 1 9 | 1 5 |
| Iron Cocks | 18 0 | 11 0 | 8 6 | 6 6 | 4 6 | 3 6 |
| Ditto, with brass plug | 32 0 | 19 6 | 15 0 | 10 6 | 7 6 | 5 6 |
| Diminishing Sockets, Caps, Plugs, and Nipples | 1 3 | 0 11 | 0 9 | 0 7 | 0 6 | 0 5 |
| Plain Sockets | 1 0 | 0 7 | 0 6 | 0 4 | 0 3½ | 0 3 |
| Syphons, 2-quart | 23 0 | 19 0 | 18 0 | 17 0 | 16 0 | — |

## SUNDRIES.

| | |
|---|---|
| Best Newcastle Fire-bricks, per 1000 | £2 10s. to £2 15s. 0d. |
| Cliff's Fire-bricks (at Wortley), per 1000 | 2 15 6 |
| Ingham's ditto (at Wortley), per 1000 | 2 15 0 |
| Farnley Iron Co.'s Fire-bricks (at Wortley), less discount | 2 17 0 |
| Fire-clay Retorts, per foot run | 5s. 6d. to 0 7 6 |
| Tarred Rope Yarn, per cwt. | 1 0 0 |

## WEEKLY METAL REPORT.

(*From* J. Berger Spence & Co.'s *Circular.*)

*Chemicals.*—The past week has shown a steady business in chemicals, with but little variation in prices. Exports have slightly increased, chiefly to the States. An accumulation of stocks at New York causes quietude there. The total shipments of this year will show a considerable increase over last year. The home trade, just now, is remarkably healthy. The full employment of paper makers gives almost unprecedented life to particular branches. Caustic soda is firm, and prices are freely paid for early delivery. Soda ash unchanged; many forward contracts have been made. Bleaching powder quiet. Soda crystals improved. Sulphate of ammonia scarce; very few lots to be had for present delivery; sellers caring rather to hold till the spring, as they expect considerably higher prices. Bichrome still 10d. Benzole enjoys a degree of animation. Nitrate of soda remains quiet, and holders disposed to take less than current quotations.


# TURNER & ALLEN,

**201, UPPER THAMES STREET,**

**London,**

## GAS & WATER ENGINEERS.

CONTRACTORS FOR THE SUPPLY OF

**LAMP COLUMNS, LANTERNS, FOUNTAINS, PIPES, &c.,**

TO

**GAS, WATER, & RAILWAY COMPANIES, LOCAL BOARDS, SHIPPERS, &c.**

*Complete Pattern and Price Book, 3s. 6d. post free.*

# DUKE OF HAMILTON'S
# LESMAHAGOW GAS COAL.

**LESSEES:**

LESMAHAGOW AND LONGLEE COAL COMPANY,

**Office—5, DIXON STREET, GLASGOW.**

**Works—BLACKWOOD & SOUTHFIELD, LESMAHAGOW.**

English and Foreign Agents:

## JAMES MILLER, SON, & Co.,

**1, GREAT ST. HELEN'S. LONDON, E.C.,**

AND

**75, UNION STREET, GLASGOW.**

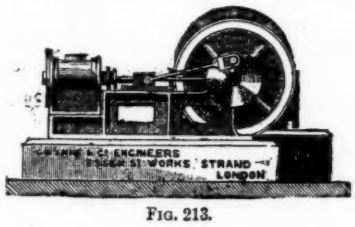


Fig. 213.

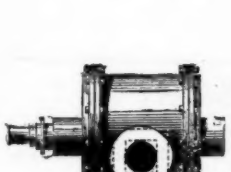

Fig. 211.

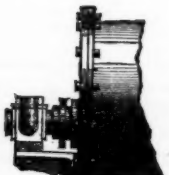

Fig. 219.

# GWYNNE & COMPANY,

HYDRAULIC, MECHANICAL, & GAS ENGINEERS,

**ESSEX STREET WORKS, STRAND,**

**London, W.C.,**

SOLE MANUFACTURERS OF

## BEALE'S IMPROVED PATENT GAS-EXHAUSTER,

**Under the personal superintendence of Mr. BEALE.**

**REDUCED PRICES AND INCREASED CAPACITY.**

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AT THEIR LATE MEETING IN DUBLIN,

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**SOUTH METROPOLITAN GASLIGHT** AND COKE COMPANY.
NOTICE is hereby given that an EXTRAORDINARY GENERAL MEETING of the PROPRIETORS of this Company will be held at the London Tavern, in the City of London, on TUESDAY, the 19th day of December next, at Two o'clock in the afternoon precisely, to take into consideration the Amalgamation of this Company with the Phœnix and the Surrey Consumers Companies.—By order,
GEORGE LIVESEY, Engineer and Secretary.
589, Old Kent Road, S.E., Nov. 28, 1871.

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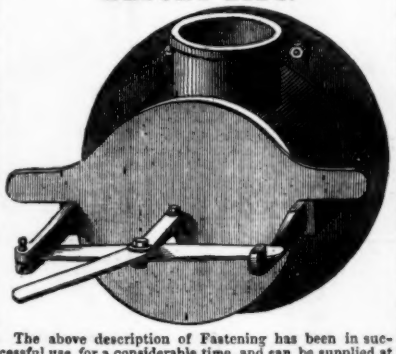
The HALF-YEARLY ORDINARY MEETING of the Imperial Continental Gas Association was held at the City Terminus Hotel, Cannon Street, London, on TUESDAY, the 28th inst., Philip Twells, Esq., the chairman, when the following resolutions were passed:—
Resolved unanimously—"That the report upon the affairs of the Association now read be received and entered on the minutes."
Resolved unanimously—"That a dividend of £2 per share be declared upon the 56,000 shares of the Association for the half year ended the 30th of June last; and that the said dividend be payable, free of income-tax, on and after the 15th of December next.
"That the cordial thanks of the meeting be given to the President and Directors for their able management of the affairs of the Association, and to the Chairman for his conduct in the chair this day.
"That the thanks of the proprietors be given to Mr. G. W. Drory, the General Superintendent of the affairs of the Association on the Continent, for the zeal and ability with which he superintends the business of the stations."
By order of the Board of Direction,
ALBERT F. JACKSON, Secretary.
30, Clement's Lane, Lombard Street,
London, Nov. 29, 1871.

**BOX'S PATENT FASTENING** FOR **RETORT-LIDS.**



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The Corporation will erect the necessary building and apparatus for the utilization of the tar and liquor on ground acquired for that purpose adjoining the new Maryhill Works, for which the contractor will pay a yearly rent during the currency of the contract.
Forms of tender, on which offers must be made, may be obtained at the Manager's Office, 42, Virginia Street, Glasgow, on and after the 10th of November, and must be returned, addressed to the "Committee on Gas Supply," to the Gas Office, 42, Virginia Street, Glasgow, not later than the 15th of December, 1871.
The Committee do not bind themselves to accept the highest or any tender.
42, Virginia Street, Glasgow, Nov. 2, 1871.

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| ,, 461, | ,, | June 7, 1870. |

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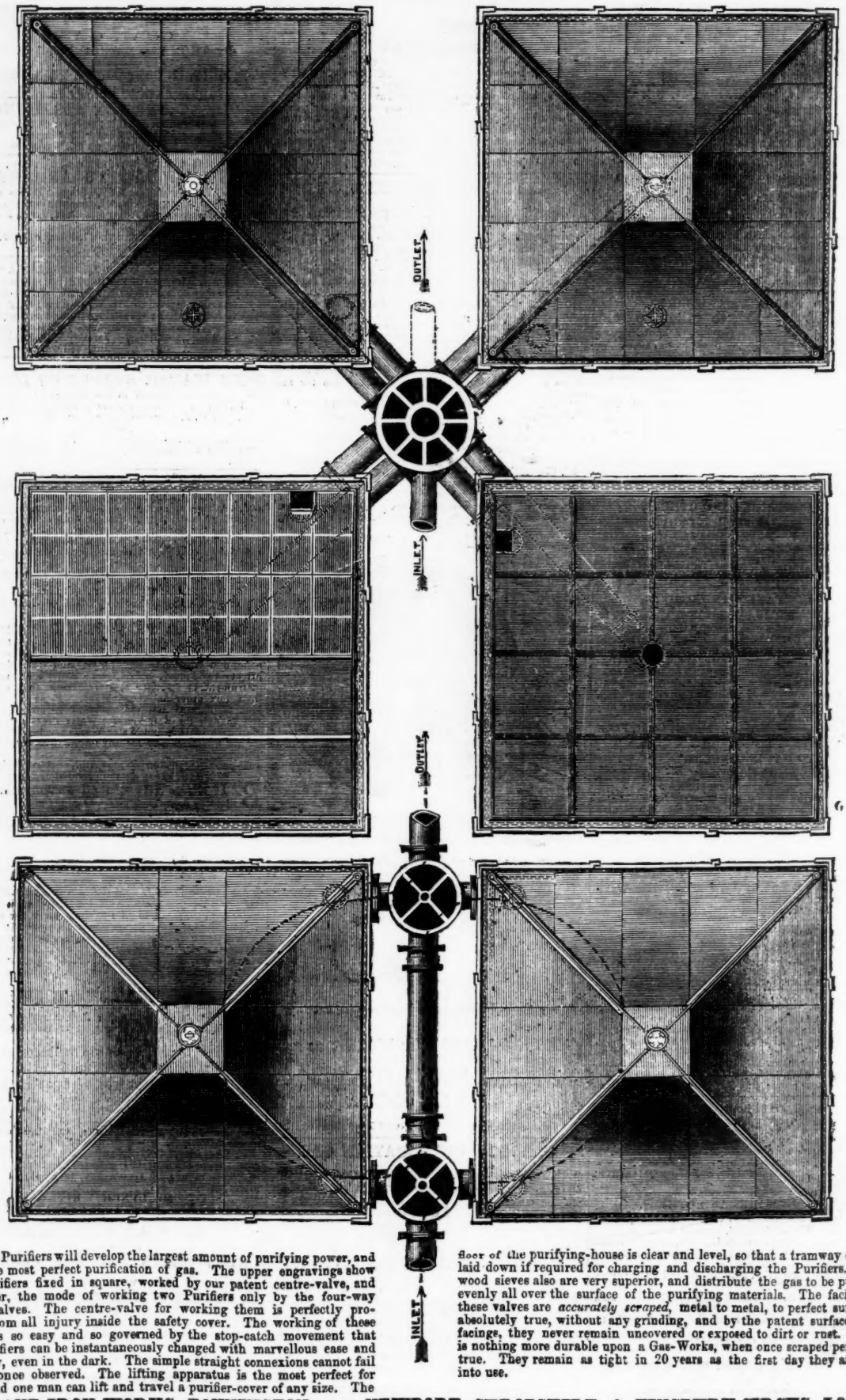


These Purifiers will develop the largest amount of purifying power, and effect the most perfect purification of gas. The upper engravings show four Purifiers fixed in square, worked by our patent centre-valve, and the lower, the mode of working two Purifiers only by the four-way centre-valves. The centre-valve for working them is perfectly protected from all injury inside the safety cover. The working of these valves is so easy and so governed by the stop-catch movement that the Purifiers can be instantaneously changed with marvellous ease and certainty, even in the dark. The simple straight connexions cannot fail to be at once observed. The lifting apparatus is the most perfect for work, and one man can lift and travel a purifier-cover of any size. The floor of the purifying-house is clear and level, so that a tramway can be laid down if required for charging and discharging the Purifiers. The wood sieves also are very superior, and distribute the gas to be purified evenly all over the surface of the purifying materials. The facings to these valves are *accurately scraped*, metal to metal, to perfect surfaces, absolutely true, without any grinding, and by the patent surfaced bar facings, they never remain uncovered or exposed to dirt or rust. There is nothing more durable upon a Gas-Works, when once scraped perfectly true. They remain as tight in 20 years as the first day they are put into use.

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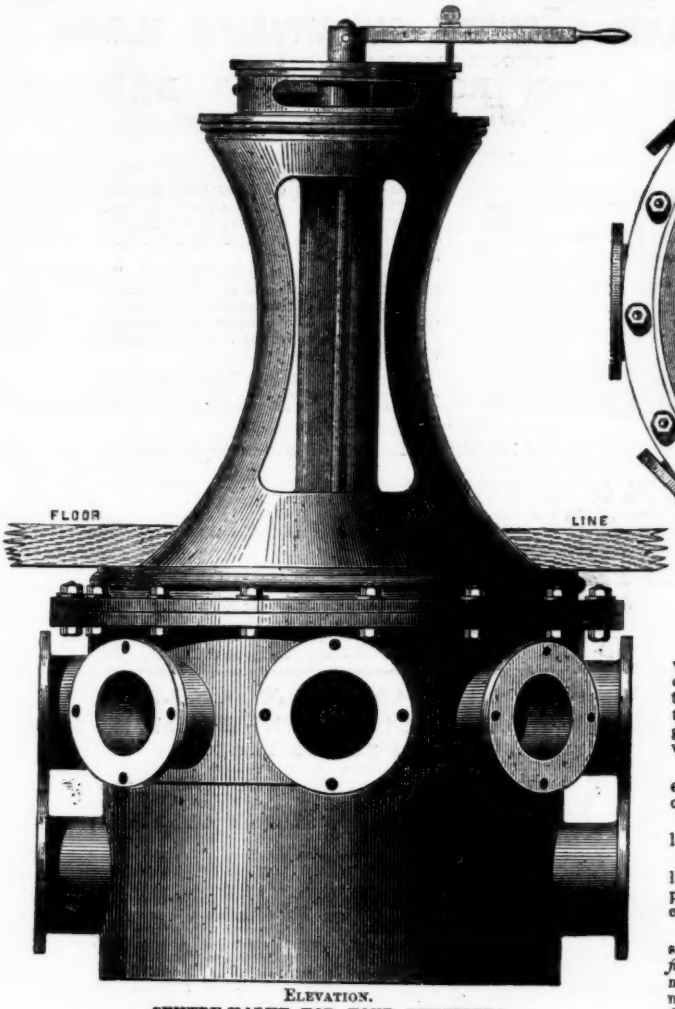
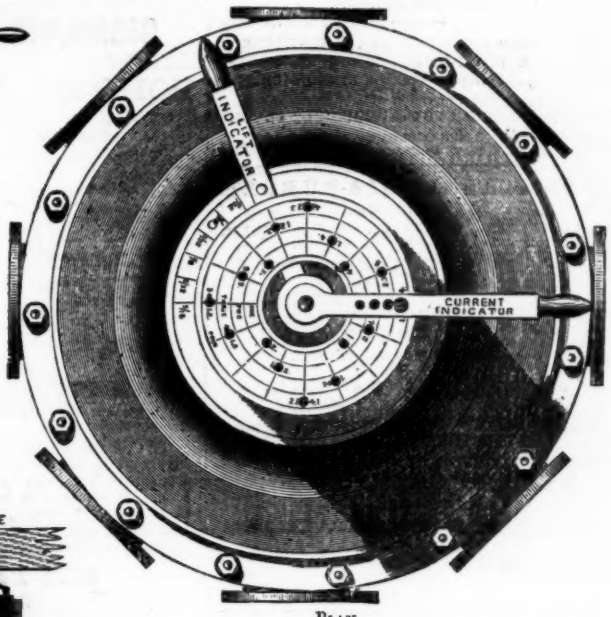
# THE RECESSED CONE VALVE.

HOLLINSHEAD'S PATENT.




ELEVATION.

CENTRE-VALVE FOR FOUR PURIFIERS.




PLAN.

These Valves are adapted for every purpose and position about gas-works, &c. They are constructed on the principle of the ordinary plug-cock, the internal cones or plugs being formed with divisions, and both the cones or plugs and bodies of the Valves are *recessed* in such a manner that no part of the working surface is exposed to or in contact with the gas, *thus securing a minimum of friction*, and also the preservation of the working surface *from deposit or deterioration*.

They are provided with screw gearing for relieving the weight of and easing the plug while changing the Valve, so as to preclude the possibility of any sticking or straining.

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The position of the Valve is changed so instantaneously that there is no liability, in the case of Centre Change-Valves for Purifiers, of impure gas passing forward into the holders during the time of changing, as is the case with Hydraulic Valves, and others used for the same purpose.

The Centre Change-Valves for Purifiers are for any number of Purifiers, so that the gas may be conducted *through the whole of the series of Purifiers*, commencing with any one of them, or shut off from any one or more at pleasure, thus enabling the whole of the purifying surface to be made available, passing the gas through any one, two, three, *or the whole four Purifiers* in succession, and in any desired order.

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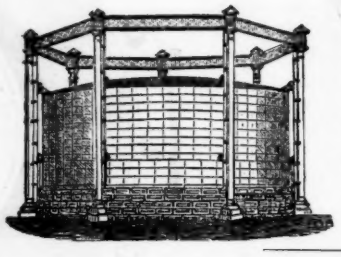

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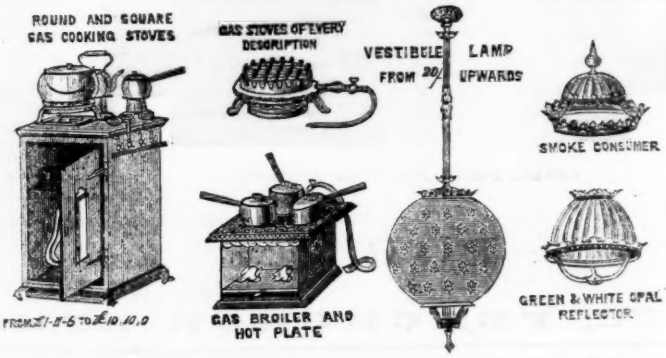
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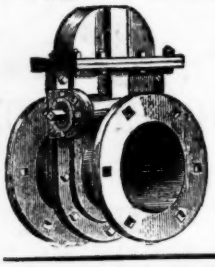

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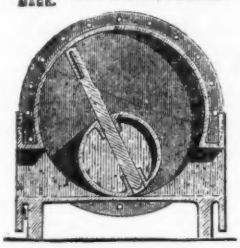

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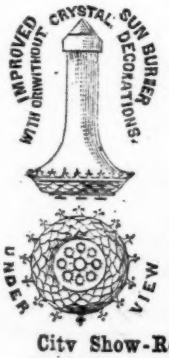

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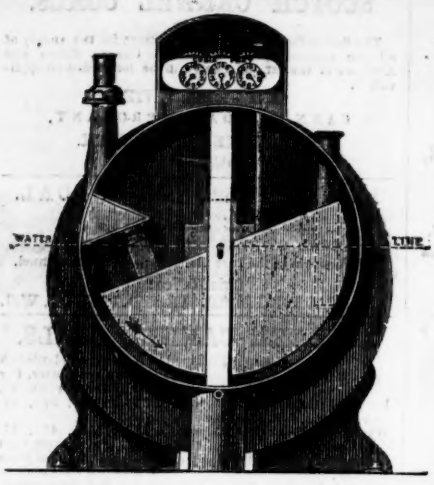


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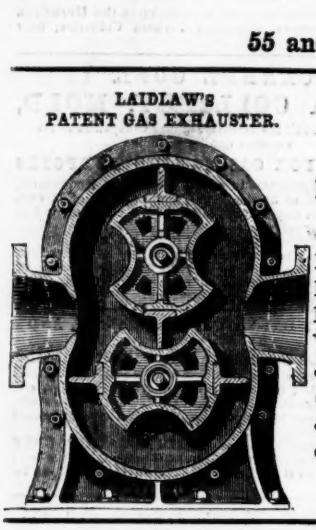

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